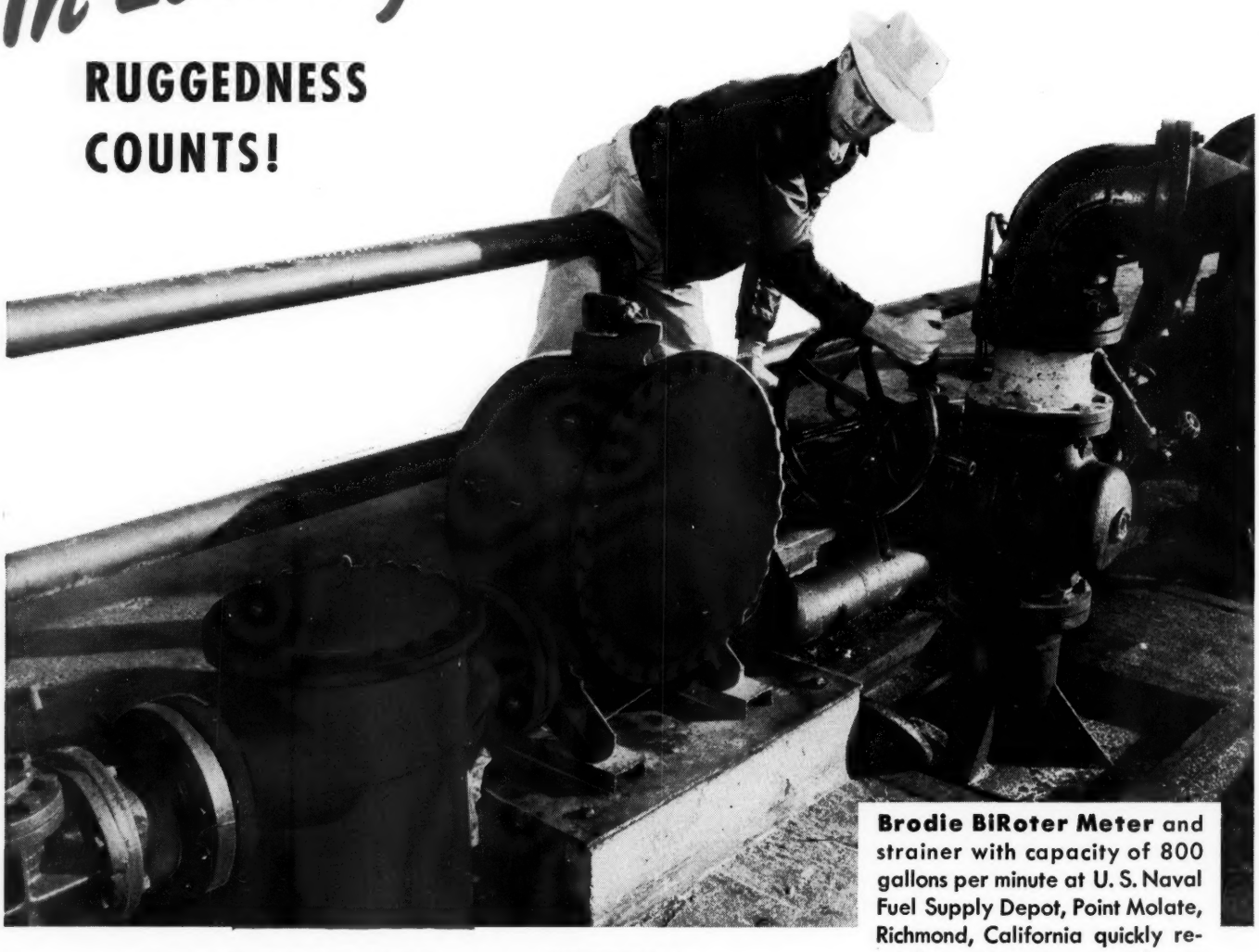
UNIV OF MICHIGAN
APR 25 1951
EAST ENGINEERING

APRIL
1951

fueloil & oil heat

In Loading FUEL OIL at marine terminals

RUGGEDNESS COUNTS!



Brodie BiRoter Meter and strainer with capacity of 800 gallons per minute at U. S. Naval Fuel Supply Depot, Point Molate, Richmond, California quickly repaid its cost in time saved over previous tank gauging methods.

— with BRODIE *BiRotor* METERS

In the transfer of fuel oil and other petroleum products at marine terminals, consistently accurate measurement of exact gallonage is an important phase of marine loading operations. In addition to high sustained accuracy, Brodie BiRotor Meters are ruggedly built of welded all-steel housing for greatest strength and durability to withstand shocks and vibrational strains. Maintenance, too, is no problem as their compactly assembled and readily interchangeable measuring elements permit quick easy inspection and periodic cleaning—without disturbing existing line connections. For maximum service in continuous high-capacity operations, investigate Brodie BiRotor Meters, today. Write for full details.

BRODIE ALL-STEEL BiRotor TRUE-ROTARY METERS

RALPH N. BRODIE CO., INC. • 61st & LOWELL STREETS, OAKLAND 8, CALIFORNIA, U.S.A.

Division Offices: 550 SO. COLUMBUS AVE., MT. VERNON, N.Y. • 59 E. VAN BUREN, CHICAGO 5, ILL. • 302 SO. PEARL STREET, DALLAS, TEXAS
221 9th AVE., N. SEATTLE 9, WASH. • 2101 S. SAN PEDRO, LOS ANGELES 11, CALIF. • *REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES*

APRIL fueloil & oilheat 1951

VOLUME 10 NUMBER 4

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ENTERED AS SECOND CLASS MATTER AT THE POST OFFICE AT BALTIMORE, MD.

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Among other things . . .

The big oilheating show and convention at Chicago has come and gone. This issue covers every phase of the event with twenty pages of good reading. First there's a story on the over-all significance and impressions, then highlights from the meetings. Next comes Johnny Schulz' appraisal of new equipment shown in the booths, and last, but not the least controversial, we have Joe Keyhole with his more or less exact impressions of the industry stalwarts that filled the booths and meetings.

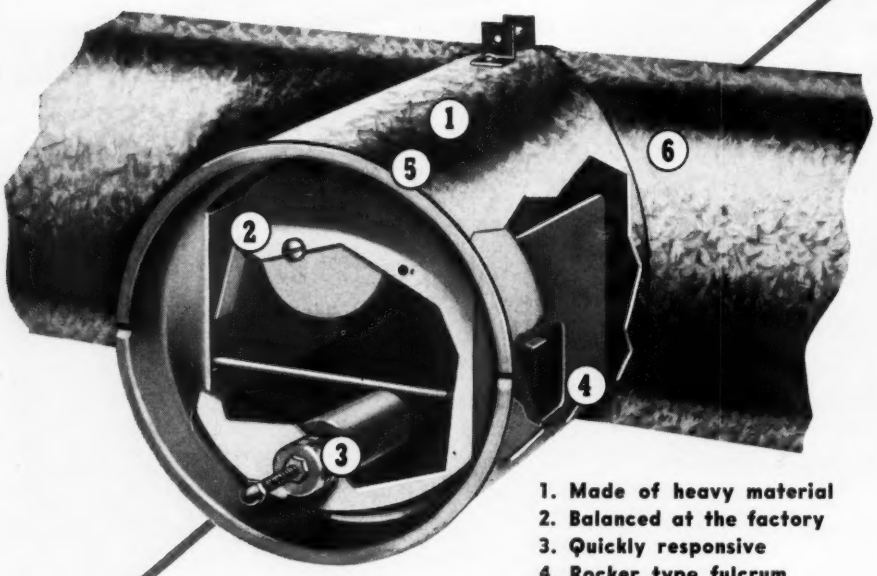
The lead story in the issue tells of the nice life enjoyed by Jim Breese and his 30 teammates in developing vaporizing equipment in the mountain air of New Mexico. The front cover pictures Breese examining a new development in the army's oilfired tent heater after signing up an order for a hundred thousand.

You'll find another useful feature story on warm air by author Ring of California, third of his series.

Leaders AMONG HEATING EQUIPMENT

MANUFACTURERS CHOOSE THE Leader

AMONG BAROMETRIC DRAFT CONTROLS



1. Made of heavy material
2. Balanced at the factory
3. Quickly responsive
4. Rocker type fulcrum
5. Does not warp, clug
6. Free smoke passage

AND THAT MEANS field OF COURSE

Heating equipment manufacturers, as well as jobbers and dealers, have elected FIELD the LEADER among draft controls. And that's because Field Controls are the most accurate, most dependable, most "saleable" draft controls available. Only Field has all the famous features needed to bring out the top efficiency in a heating plant. That's why 7 out of 10 installations now carry a Field Control.

Don't experiment. Put a Field Draft Control on every installation. When a better draft control is designed it will come from the Field laboratories.

field CONTROL DIVISION

DIVISION OF H. D. CONKEY & CO. • MENDOTA, ILLINOIS

AFFILIATES { CONCO BUILDING PRODUCTS, INC. BRICK • TILE • STONE
CONCO MATERIALS HANDLING Div. CRANES • HOISTS

Names in the News

William J. O'Neill has been elected chairman of the board and chief executive officer, Iron Fireman Mfg. Co., Portland, Ore. He has managed the company's Chicago operations for the past 15 years. The following also were

O'Neill

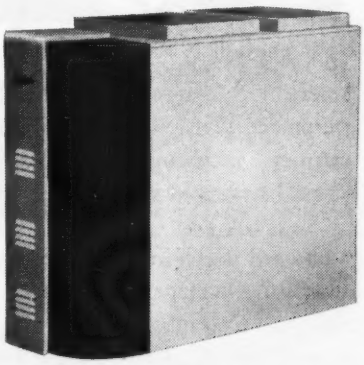
Burg

designated by the board of directors to assume new or additional positions: *C. T. Burg,* Cleveland, vice-president in charge of sales; *E. C. Webb,* Cleveland, vice-president in charge of research and development engineering; *Lewis J. Cox,* Portland, vice-president in charge of public and employee relations; *Jack L. Jennings,* Portland, vice-president in charge of operations and *C. W. Snider,* Portland, continuing as secretary and controller.

D. G. Leslie has resigned as vice-president and general sales manager, The Torrington Mfg. Co., Torrington, Conn. *Dudley B. Robinson* has been dsignated to assume direction of sales for the company. Mr. Leslie has made no announcement as yet about his future plans.

R. E. Loebell and *Allen Bechtel* have been appointed sales representatives, Ingersoll Products Div., Borg-Warner Corp., Kalamazoo, Mich. Mr. Loebell, who will act as eastern sales representative, formerly was branch manager for Bryant in Milwaukee and has been in the heating industry for more

"Service is no problem with FLUID HEAT Equipment!"



FLUID HEAT Furnaces for any size home

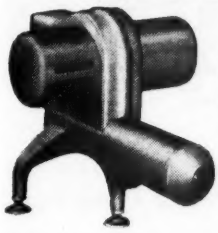
Model R-85 Winter Air Conditioning Furnace (illustrated above) is especially designed for the small home with a basement. Unit delivers 85,000 B.T.U. per hour. Attractively finished in maroon and beige. Incorporating the latest developments in C.A.C. (continuous air circulation), this Fluid Heat Unit provides steady, comfortable heating in addition to efficient air filtration. Many other models, both vertical and horizontal types, for small, medium-sized and large homes, ranging from 70,000 to 200,000 B.T.U. per hour.

"When I put in a heating unit, I want it to give long, dependable service . . . because that means I've got a satisfied customer . . . and I'm not bothered with unprofitable 'nuisance' calls.

"That's one of the reasons I value my Fluid Heat Franchise. Not only is every unit in the complete Fluid Heat Line easy to install, but they all give long, efficient, trouble-free service. That's due to the many features of Fluid Heat Burners . . . such as the exclusive constant-velocity discharge air regulator and the stainless steel nosepiece which develops and reflects less temperature to nozzle body, thereby reducing nozzle coking.

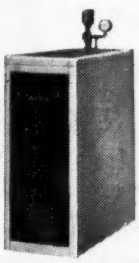
"When you sign up as a Fluid Heat Franchised dealer, you're backed by a manufacturer who's been designing and building oil heating equipment for 29 years! You get full cooperation from trained field representatives in merchandising and selling. And every unit is backed to the hilt to assure you complete customer satisfaction!"

Big, complete line gives you more sales advantages



Famous Fluid Heat Pressure Burners. Four models with firing rates from 7/10 to 12 gallons per hour.

Famous Fluid Heat Wall Flame Rotary Burners. Two models with firing rates from ½ to 4½ gallons per hour.



Famous Fluid Heat Boiler Burner Units. Six models rated from 300 to 1090 sq. ft. of standing steam.

A complete line of Oil fired Heating Equipment

Mail Coupon NOW for details!

fluid heat
HEATING EQUIPMENT

Manufactured by ANCHOR POST PRODUCTS, INC.
Baltimore 24, Maryland. Established 1892

"WORLD'S ECONOMY CHAMPION"

Fluid Heat Division, ANCHOR POST PRODUCTS, Inc.
6700 Eastern Avenue, Baltimore 24, Maryland.

Gentlemen: Please rush me full details on Fluid Heat's Dealer Franchise Plan.

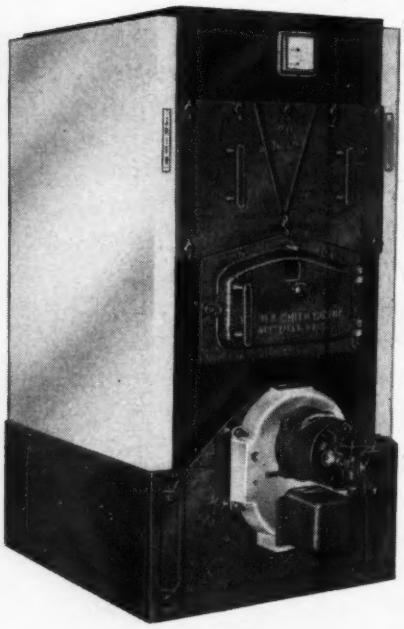
Name.....Firm.....

Address.....

City.....Zone.....State.....

for larger homes or

small business establishments

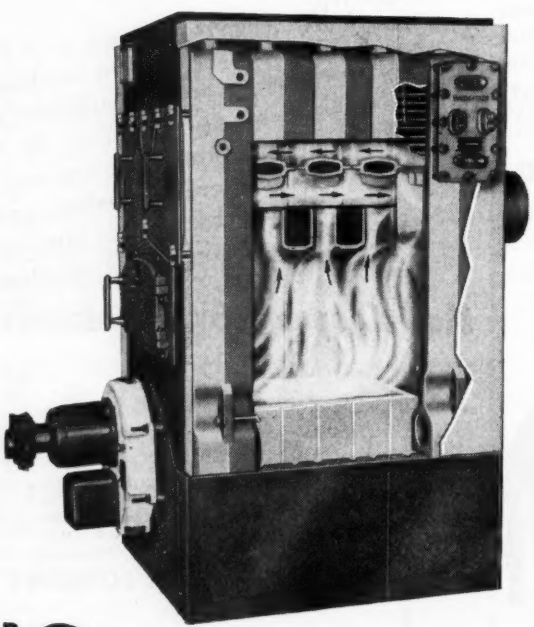


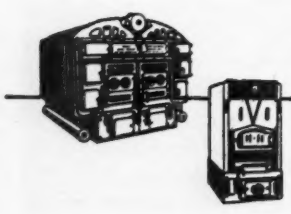
H. B. SMITH
"2,000"
BOILER BURNER UNIT

Engineered for high efficiency

Here's an integral boiler burner unit of high efficiency. Based on the famous Mills "20" boiler, it includes an improved oil burner engineered for this specific purpose. Recommend the "2000" for applications requiring net I=B=R steam ratings of 675 to 1275 sq. ft. or equivalent hot water ratings.

Cut-away view shows the sturdy cast iron construction and engineered Mills flue travel which provides fast heat and economical operation. Available with flush jacket or with jacket extended to conceal the oil burner. Supplied with large-capacity tankless water heater or built-in storage tank heater. Black and cream enamel finish.

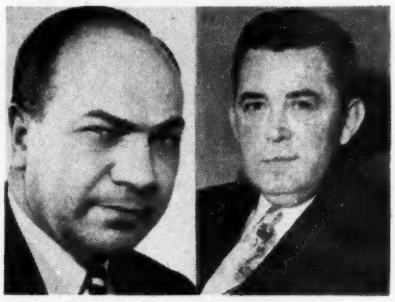




H. B. Smith

CAST IRON BOILERS
The H. B. Smith Co., Inc., Westfield, Mass.
OFFICES AND REPRESENTATIVES IN PRINCIPAL CITIES

than 20 years. Mr. Bechtel, formerly with the Cleveland office of Minneapolis-Honeywell Regulator Co. and with



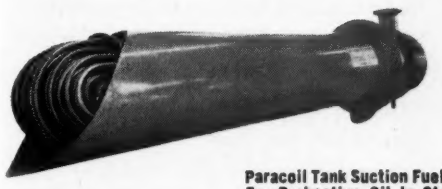
Loebell Bechtell

American Radiator's warm air heating equipment division, will work in the territory including Ohio, western Pennsylvania and western New York.

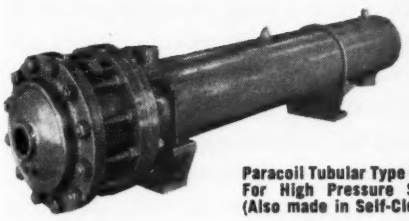
Edward D. Quirke has retired as advertising manager of Kewanee Boiler Corp., Kewanee, Ill., and has been succeeded by *C. Keith Ferguson*. Mr. Quirke's retirement was automatic in line with company policy for length of service. He had been advertising manager of Kewanee for 27 years, starting January 15, 1924 and was associated with Kewanee manufacturing companies for 40 years. In 1910 he began work with the National Tube Co., Kewanee Works, later was employed as chief draftsman by National's successor, Walworth Co. and finally became affiliated with the Kewanee Boiler Corp. Mr. Ferguson following discharge in 1945 after service with the RAF and U. S. Air Force, became advertising manager, Keystone Plbg. & Htg. Co., Pittsburgh. In 1948 he joined American Radiator's advertising department and in September 1949 was named assistant advertising manager at Kewanee.

F. J. VanPoppelen has become general manager of the Air Conditioning Dept., General Electric Co., Bloomfield, N. J. He had been assistant general manager since the first of the year. Mr. Van Poppelen joined G.E. in 1949 at Schenectady, and came to Bloomfield the same year as manufacturing manager.

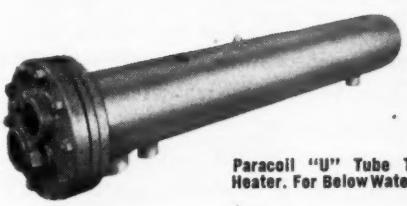
SINCE 1915 Paracoil FUEL OIL HEATERS



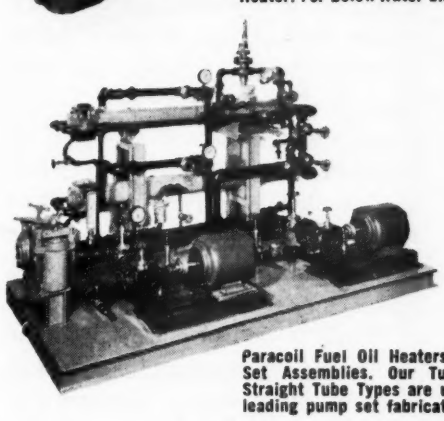
Paracoil Tank Suction Fuel Oil Heater. For Preheating Oil in Storage.



Paracoil Tubular Type Fuel Oil Heater. For High Pressure Steam Service. (Also made in Self-Cleaning Models.)



Paracoil "U" Tube Type Fuel Oil Heater. For Below Water Line Service.



Paracoil Fuel Oil Heaters on Pump Set Assemblies. Our Tubular and Straight Tube Types are used by all leading pump set fabricators.

. . . have been the considered choice of the nation's leading oil burner installation contractors, burner manufacturers, and package boiler fabricators . . . because

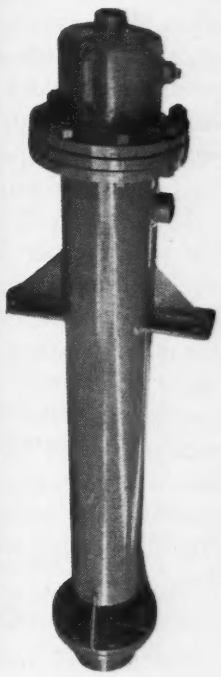
- PARACOIL has been part and parcel of the oil burner industry from its inception – and is intimately acquainted with its needs!
- PARACOIL builds every size and type of fuel oil heater used in the industry—with capacities to 3000 GPM or more, for bulk storage operation. You can standardize on Paracoil without limitation!
- PARACOIL heaters are correctly built and conservatively rated. Maximum heat transfer—low pressure losses—long operating life at top output—and freedom from service shutdowns—are annual dividends with Paracoil Fuel Oil Heaters!
- PARACOIL prices are right. Mass production of standardized models is the answer! Heavy factory stocks permit quick delivery on catalogued models and sizes.

Your Heavy Oil Installations Deserve the Best Equipment . . . Put a Paracoil Fuel Oil Heater on your next job—and see the improvement!

Write for Descriptive Bulletins and Prices on your letterhead!

AGENCIES IN PRINCIPAL CITIES

Paracoil Vertical Type Tank Suction Heater. (For Buried Tank Installations.)



DAVIS ENGINEERING CORPORATION

1058 E. Grand St., Elizabeth 4, N. J.

Paracoil Line Type Fuel Oil Heater. For Bulk Station Operation.

Editorial Leaks

"If Russia should get the oil now in Iran, what would that do to supplies in this country?", writes an oilheating dealer from the West.

Apparently there would be no early effect, since we have at present a substantial world surplus of crude oil. The whole idea is a little disturbing, though, since Iran has 6% of the world's oil production. Added to the 8% that Russia and her satellites now control we would have a potential enemy better prepared on war's No. 1 material.

Latest reports from Iran show that the new premier is friendly to the Western world rather than Russia, so while he lives we can probably expect the oil to remain in safe hands. Looking a step farther ahead in possibilities, if a big war started and Russia took over all of Middle East oil, that would add another 9% for a grand total of 23% under Russian control. The democracies would still hold the long edge.

❖

Oil industry resentment over proposed Government regulation of fuels is showing up in a number of similar statements by top brass in the American Petroleum Institute. The remarks spring from the Senate resolution authorizing the Senate Committee on Interior and Insular Affairs to formulate an official national fuel policy.

Frank M. Porter, API's president, expressed it this way to the Illinois Petroleum Marketers Assn., "Various Government agencies are supporting this legislation, as is the coal industry which appears to believe that the ills of its industry can be cured by regulation of the free play of competitive forces and the end use control of energy resources that will shift a greater portion of our fuel requirements from oil and natural gas to coal. Of course, we have always had a national fuel policy—a policy that relied on competition, individual initiative and freedom of choice on the part of the consumer."

Then Hines H. Baker, president of Humble Oil and Refining, addressed this remark to Senator O'Mahoney, chairman of the committee, "Any system of monopolistic allocations of markets to fuels through Government control and planning would inevitably have been less satisfactory and much more expensive to the consumer than the competitive system. Controls based on a fear of shortages would in themselves tend to bring about a shortage."

Jake L. Hamon, prominent oil producer puts it this way, "End use means that some bureaucrat decides whether oil, gas, coal or electricity should be burned in homes and industries, and that means end of free competition."

❖

In the Heil Co.'s house organ, "Sales Booster," appeared some common sense under the heading, "You're a Customer Too." This is how it goes:

One of the best ways to learn about selling is to study yourself. It is easy to forget that you, too, are a customer half the time and the same things that influence you frequently influence the people you are trying to sell.

People like to buy things. They don't like to be sold. They like to feel that they are not influenced by other people in making decision. No one, after he has made a purchase, wants to feel that he has been high pressured.

A man making up his own mind feels important. And he is important if he has collected enough money to pay for what you want to sell him. The selling job, then, is to make people feel important, to make them feel that they have reached their own decisions. Explain the sales story so simply that the prospect can make up his own mind. Every customer should be left feeling, "Brother, when I see what I want I buy it; nobody sells me nothin'!"

Prospects are not a separate breed, no different from you or me.

❖

Hiff Horning, on-the-ball secretary of the Northwest Petroleum Assn. and the National Oil Jobbers Council, has a writing flair that makes good reading. Under the title, "Tenderfoot" he describes an incident in a visit to an oil man upstate, like this:

"The back of the lap is maughty touchy today, due to seven million sharp contacts with a saddle yesterday. Under that saddle was a horse which took a keen delight in timing his up with our down. The result was shocking, to say the least.

"Spending a Sunday afternoon with Doppy Distel at Le Sueur we were lulled into a sense of complacency by Dop's quiet, 'let's take the horses out for a little ride.' Come to think about it, it actually sounded like the stuff to feed the troops at the time. It wouldn't appeal at all today.

"After jogging (he calls it) along for a half mile or so, we allowed as how it would be nice if the horses knew how to just walk for a while, quite a while. We could already read the handwriting on the saddle, and sheepishly mentioned to Dop that tomorrow looked like it would be a stiff one. Oh shucks, he said, we wouldn't feel it.

"Well now bigosh, it was fun. And although there isn't much of a German goiter as yet, the exercise was good for a fellow, wasn't it? Of course it was. So we settled down (what a bald-faced lie that is) to thoughts of boots and saddles, gimme the wide open spaysuz, and lone-rider-on-the-trail dreams.

"That's when Dop hollered back and said to dig the horse in the ribs with our heel. Man, oh man, have you ever tried that? On an Arabian horse? The horse just switched over to the jet engines, and it became a serious life and death matter from then on.

"How we ever managed to crawl back up from the end of his tail into the saddle we will never know. And then just to keep things humming merrily, Dop's beast got mad because ours had caught up to him, and by this time ours was in no mood for sich foolishness from his stablemate, so the expression, 'champing at the bit,' is putting it mildly indeed. Meanwhile the northern end of our southern exposure had been making constant contact with the enemy. And let us say this too, 'That horse knew who was the master . . . he was.' There's more to the story, but you don't expect us to stand here writing all day, do you?"

IT'S EASIER THAN YOU THINK

to equip old tanks with VENTALARM® Signal

Let Scully

"tested literature"

. . . tell you the real facts about VENTALARM Signal.

. . . carry the VENTALARM story to customers and prospects.

For YOU

What standard installation of all your present fuel accounts with VENTALARM Signal means to you in savings of time, money, fuel, and equipment.

How VENTALARM Signal helps you

. . transfer your accounts from "call in" basis to "keep full" basis.

. . renew present fuel delivery contracts.

. . eliminate most causes of delivery complaints.

For Your Mailing

Colorful folders ready for your use as mailing enclosures. Tell complete story to your customers as to benefits you give them by equipping their fuel tanks with the Whistling VENTALARM Signal.

VENTALARM Insurance Policy

For distribution with installation of VENTALARM Signal. Educates and impresses; binds customer closer.

SAMPLE LETTERS

Proven customer goodwill builders for use when offering new type VENTALARM Oil Delivery.

Savings up to 30% on delivery costs have been realized by every fuel oil company that has equipped old as well as new accounts with VENTALARM Whistling Tank Fill Signal. Savings in time, fuel, equipment, and manpower. The kind of savings that are more important today than ever before.

Don't deny your company VENTALARM Signal delivery savings because of a misunderstanding as to the work involved in making old tank installations. It's easier than you think.

1. The average installation on an old tank can be made in less than 15 minutes.

2. VENTALARM Signal is available in enough shapes and sizes to satisfy any tank vent pipe conditions you may have.

3. Compression fitting does it. No pipe threading or special fittings are necessary.

IN EIGHTY PERCENT OF THE CASES:

Type LC (quick compression hook-up) in its variety of vent pipe sizes will fill your needs.

BOTTOM	TOP	PART NO.
1¼" male	1¼" compression fitting	220
1¼" male	1" compression fitting	221
1" male	1" compression fitting	224
¾" male	¾" compression fitting	229
2" male	2" compression fitting	275

THE REMAINING TWENTY PERCENT

of conditions can be met with Elbow Models LE 90 C and LE 45 C, LU (union top), and Series 900 for use where vent is far distant from fill pipe.

Model LA with threaded top to receive threaded vent pipe available for new burner installations.

All models for old and new tanks are available through your regular Supply House.

Fuel Oil Company pamphlets and sample customer mailings sent immediately upon request.

Customer mailing folders available at less than $10. per 1000 copies.

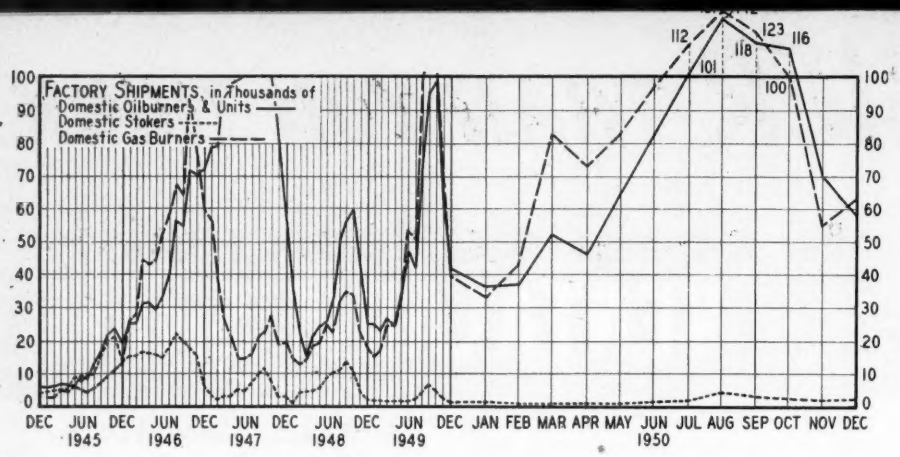
Fully protected by U.S. and Foreign patents.

SCULLY SIGNAL COMPANY

76 First Street, Cambridge 41, Mass.

Canadian Licensee: EMPIRE BRASS MFG. CO., LTD., London, Ontario

VENTALARM Signal now in use on over 2,000,000 home fuel oil tanks and as standard equipment on over 1,000,000 cars.

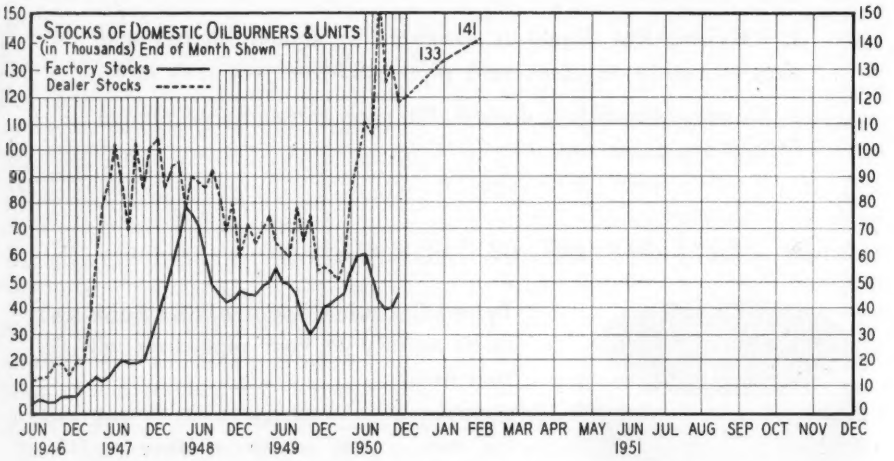

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
Domestic Gas Burners
112
123
116
118
101
100
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1945 1946 1947 1948 1949 1950

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	DECEMBER			TWELVE MONTHS		
	1950	*1949*	*Percent Change*	*1950*	*1949*	*Percent Change*
Conversion	39,569	29,793	+ 32.8	664,053	445,966	+ 48.9
Boiler Units	6,074	4,002	+ 51.7	90,140	54,652	+ 64.9
Furnace Units	13,322	7,052	+ 88.9	171,074	96,674	+ 76.9
All Domestic	58,965	40,847	+ 44.3	925,267	597,292	+ 54.9
Commercial	4,381	2,212	+ 98.0	36,554	25,736	+ 42.0
Total	63,346	43,059	+ 47.1	961,821	623,028	+ 54.3


STOCKS OF DOMESTIC OILBURNERS & UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
141
133
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1946 1947 1948 1949 1950 1951

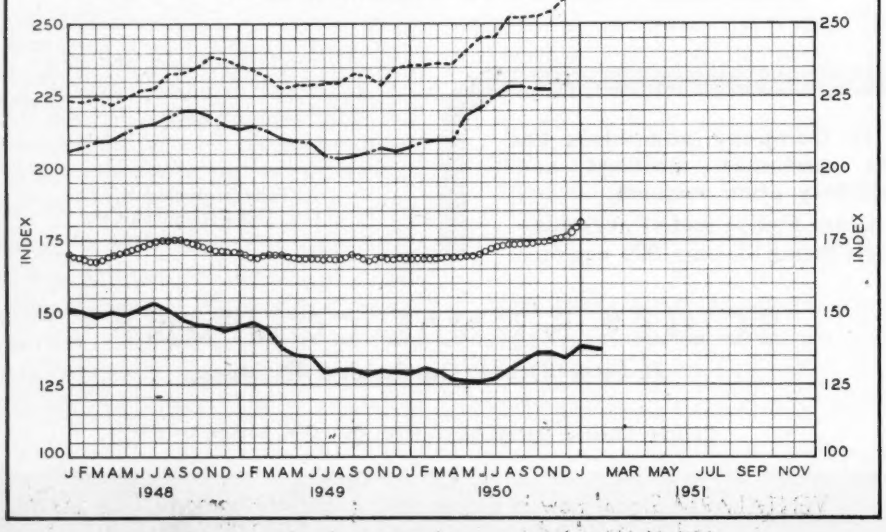
February Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
February Aver.	$327	$683	$608
January Aver.	327	673	613

Price Index: Conversion Burners: January 1940 is 100%

	WHOLESALE				RETAIL		
February	141.5	Six months ago	128.8	February	136.8	Six months ago	130.8
January	136.5	Year ago	122.8	January	137.9	Year ago	130.1

OILBURNER PRICES COMPARED TO GENERAL INDEXES


OILBURNER PRICES - RETAIL CONVERSION BURNER - JAN. 1940 = 100
INDIVIDUAL INCOMES - BUREAU OF LABOR STATISTICS - 1939 = 100
CONSTRUCTION COSTS - RESIDENTIAL - DEPT. OF COMMERCE - 1939 = 100
COST OF LIVING - BUREAU OF LABOR STATISTICS - 1935-39 = 100
INDEX
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1948 1949 1950 1951

Oilheating Trends

INSTALLATIONS of domestic oilburners and units in February are estimated at 34,002, or 32% above the 25,775 installed in the same month of 1950.

The February installations were divided: New homes 8,121; Replacements of old oilburners 7,448; Conversions from other fuels 18,433. The drop in new homes from the January figure of 12,452 may reflect the anticipated reduction in new homes this year or it may be that we are just getting cleared of last year's building program.

Total installations for the first two months were 73,973 compared with 58,354 in the corresponding months of last year, a gain of 27%.

BURNER STOCKS: On March 1 dealers had in their stock rooms approximately 140,709 domestic oilburners and units, showing the continued uptrend in inventory accumulation that started a year ago. On February 1 dealer stocks had been 132,780 and on January 1 they were 119,509. Factory stocks on November 31, the latest available information were 45,931.

TANK STOCKS: Stocks of customer tanks stacked on the premises of oilheating dealers on March 1 were approximaely 122,693, again demonstrating the dealers determination to pile up everything they can while the getting is good. On February 1 the figure was 100,070 and on January 1 it was 76,130. The March 1 stocks were divided by sizes as follows: 220-275 gallon 115,427; 550-675 gallon 4,630; 1,000 and larger 2,636. The average tank price, curiously, dropped during February to $43 for the 275 gallon size, down $2 from the January average. The only reasonable explanation for this is quantity buying. Some dealers reported prices as low as $36 on large purchases.

BURNER SALES OUTLOOK: Dealers throughout the country are feeling better about the year than they were two months ago. Their composite opinion as they look around their local markets is that total burner installations this year will be just 1% below last year. There is some variation on this by sections of the country. New England dealers expect sales in the fulll year 1951 to be up 5%; Mid-Atlantic

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BELL SYSTEM

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dealers look for a 3% drop; those in the Midwest forecast a 1% drop; and on the Pacific Coast they expect sales to be down 3%. Of course, individual dealers cover a much wider range in their thinking, all the way from a gain of 75% to a drop of 50%, but the averages point to their expecting about the same business as last year.

Certainly there are going to be restrictions on materials that will cut off a lot of sales, but it may be possible that their large inventories will offset the unfavorable points in the outlook. Mentioning that they are more optimistic today than two months ago brings up the fact that on January 1 their outlook called for a drop of 12% this year.

MATERIAL SHORTAGES: While there is a great deal of conversation about trouble getting materials, actual installations have not been seriously hurt. The number of jobs that could not be completed in February due to shortage of one or more materials was only 608 in the whole country. Most of the complaint about material shortages is a matter of having too low inventories on some items rather than absolute inability to get things necessary to finish immediate installations. On the few jobs that could not be completed in February these were the missing items in the order of their prominence: copper pipe and tubing, convector radiation, baseboard radiation, tanks and sheet metal for ducts.

Inability to get aluminum for ducts is going to give the industry trouble later in the year. The government order prohibits the use of this material for ducts after June 30th. During February 30% of all of the reporting dealers used aluminum ducts and on the average they used it for 75% of their jobs. The dealers who used aluminum were a little larger than average since they accounted for 37% of all oilheating installations. A mathematical calculation from the percentages mentioned shows that about 28% of all oil-fired warm air jobs installed during February had aluminum ducts. This presents a serious problem of finding enough steel duct material to replace aluminum after the mid-year.

A number of boiler manufacturers are finding it necessary to omit jackets.

Oilburner* and Building Permits

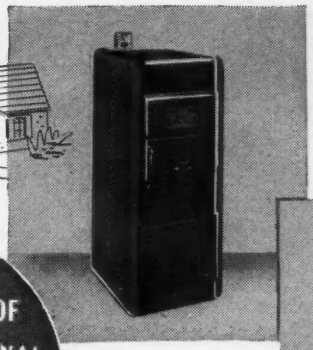
OILBURNERS					DWELLINGS			
February		2 MONTHS			February		2 MONTHS	
1951	1950	1951	1950		1951	1950	1951	1950
44	32	98	73	Albany, N. Y.	..	..	..	..
257	238	563	755	Baltimore, Md.	408	837	851	1058
..	..	..	..	Binghamton, N. Y.	2	2	5	3
..	..	..	..	Bloomfield, N. J.	2	1	5	8
..	226	..	635	Boston, Mass.	17	11	29	43
102	45	183	118	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	49	82	81	109
1	5	2	7	Columbus, O.	..	..	..	..
..	..	..	..	Des Moines, Ia.	66	38	137	64
..	74	..	203	Detroit, Mich.	594	1116	1177	2225
23	23	71	64	Elizabeth, N. J.	13	0	18	12
27	48	72	64	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	..	19	..	44
..	..	..	..	Hackensack, N. J.	3	30	5	57
264	79	485	304	Hartford, Conn.	..	..	..	..
..	..	..	..	Hudson County, N. J.	..	..	..	..
11	14	25	30	Irvington, N. J.	1	3	3	3
..	..	..	..	Lynn, Mass.	8	6	18	20
28	20	102	90	Meriden, Conn.	..	..	..	..
57	166	150	351	Milwaukee, Wisc.	130	177	268	327
44	51	130	146	Minneapolis, Minn.	48	37	143	85
13	13	35	25	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	0	2	0	6
20	12	41	40	Mt. Vernon, N. Y.	..	..	..	..
81	60	176	128	Newark, N. J.	..	..	..	..
82	162	101	265	New Bedford, Mass.	..	..	..	..
37	21	95	51	New Haven, Conn.	..	..	..	..
..	..	..	..	New Orleans, La.	..	..	..	..
..	10	..	43	New Rochelle, N. Y.	10	3	31	9
..	1442	..	3689	New York City (total)	..	..	..	..
..	1054	..	2655	Brooklyn-Queens	..	..	..	..
..	388	..	1034	Manhattan, Bronx, Rchd	..	..	..	..
172	50	235	111	Norfolk, Va.	101	120	172	201
..	..	..	..	Oakland, Calif.	..	..	..	..
..	58	..	115	Omaha, Neb.	38	26	85	45
8	8	23	12	Orange, N. J.	0	0	18	0
8	8	21	14	Passaic, N. J.	..	..	..	..
27	28	49	53	Paterson, N. J.	15	11	24	19
676	263	1591	771	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	18	6	44	20
25	15	114	39	Portland, Me.	1	4	4	10
253	373	503	633	Portland, Ore.	152	131	288	225
13	7	25	18	Poughkeepsie, N. Y.	..	..	..	..
..	37	..	101	Providence, R. I.	..	17	..	30
..	..	..	..	Reading, Pa.	14	3	17	12
118	54	215	130	Richmond, Va.	53	59	92	117
48	69	76	158	Roanoke, Va.	..	..	..	..
112	86	253	185	Rochester, N. Y.	..	..	..	..
7	14	45	36	Rockville Center, N. Y.	9	15	20	21
25	12	54	42	Salem, Mass.	4	3	7	6
..	55	..	114	St. Louis, Mo.	48	50	85	87
50	93	159	222	St. Paul, Minn.	49	48	90	66
60	39	131	124	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	180	149	330	263
..	..	..	..	Springfield, Mass.	26	43	55	59
72	55	134	151	Stamford, Conn.	..	..	..	..
..	10	..	27	Syracuse, N. Y.	14	16	28	48
..	..	..	..	Trenton, N. J.	4	2	6	3
..	..	..	..	Utica, N. Y.	6	0	11	3
76	69	184	193	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	10	17	50	28
25	12	44	24	White Plains, N. Y.	4	11	13	17
62	30	142	100	Wilmington, Del.	22	23	30	30
120	69	246	173	Worcester, Mass.	..	..	..	..
28	35	76	58	Yonkers, N. Y.	..	..	..	..
3076	2378	6649	5758	Totals	2100	3080	4222	5303
+29.4		+15.5		*Percent Change*	—31.8		—20.4	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

Among the reporting dealers 11% say that they are installing boilers without jackets. On the average, 42% of their February boiler installations did not have them. Again, mathematically, the 42% of installations by 11% of dealers shows that about 5% of all oil boilers in February had no jackets. Quite probably this percentage will increase.

MANPOWER: Since the Korean difficulty started last June oilheating dealers throughout the country have lost 2163 men to the armed forces. In addi-

(*Please turn to page* 143)

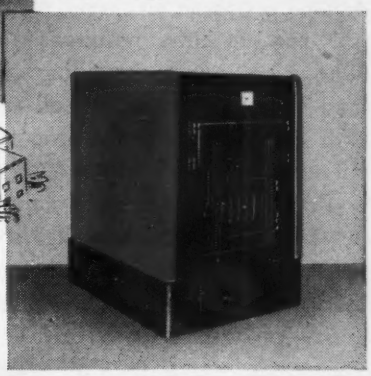


"100" series—smart and compact for small home installations in kitchens, basements or utility rooms. Wet base construction.

"200" series—sturdy, dependable heating plant for medium to larger size homes or commercial buildings with equivalent heating needs.

"300" series—superbly efficient plant for homes, apartments and commercial buildings where heating needs are beyond those of average size.

A COMPLETE LINE OF *CAST IRON* NATIONAL *HEAT EXTRACTORS* FOR OIL-FIRING



This well-known NATIONAL family of profit-producers is available for 1951 business

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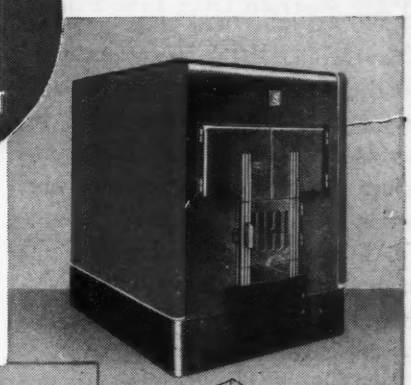
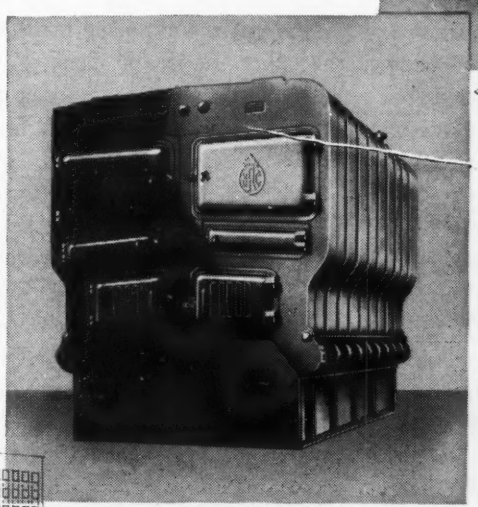
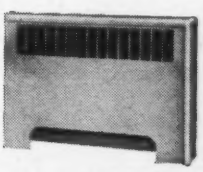


Whatever the size of the job or the requirements, there is a Cast Iron National Heat Extractor (steam or hot water) ready to fill the bill with utmost satisfaction. Over nine years of engineering research and development have provided these valued features—economical performance, long efficient life, compactness, smart appearance, easy convertibility to any fuel—which make National Heat Extractors so readily saleable and so highly acceptable to customers. Sizes range in Net I-B-R Ratings from 170 to 10,300 sq. ft. of steam and from 270 to 16,480 sq. ft. of water for hand or automatic firing. For year 'round domestic hot water, National Heat Extractors can be equipped with a tankless or storage type heater. Write for literature on National Heat Extractors, National Aero Convectors, National Art Radiators or other products of the *Complete* line of National Heating products.

"400" series—for large buildings and institutions. Big in performance, small in streamlined proportion—provides economy and efficiency in big boiler operation.



"500" series—high capacity for the largest heating jobs—schools, hospitals, apartments and hotels. "Twin Sections" for easy installation without major structural alterations.



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NRC

THE NATIONAL RADIATOR COMPANY

JOHNSTOWN, PENNSYLVANIA

Government Influences on Fuels

by
Milburn Petty

WASHINGTON—Petroleum Administration for Defense has submitted a budget for materials required for a million-barrel expansion in oil production, refining and transportation capacity within two years.

This 150-page report to the Defense Production Administration was intended to present an overall picture of the new facilities required to keep abreast of rapidly-expanding civilian and military demand as well as provide against other demands in case of all-out war.

PAD's aim was to stake out a claim now for the materials needed so that DPA can consider these requirements in connection with the controlled materials program starting July 1.

PAD Worried Over Line Pipe

Meanwhile, PAD is so concerned over the line pipe supply—particularly for gas transmission—that it has requested DPA to "freeze" the manufacture of such pipe at present production levels.

PAD acted after noticing that output of line pipe dropped 39% in October-December, with still greater slippage in the first quarter.

Pipe delivery dates have been shoved back 3 to 12 months. Some pipe, scheduled for 1951 delivery, will not be received in time to complete oil and gas pipelines and gas distribution projects as needed. (Gas will be particularly hard hit because—unlike oil—it can be moved only by pipeline.)

Cites Effect on Gas Supply

In a memo to DPA on line pipe, PAD cited what it said was the situation of two major gas transmission systems serving a large area.

Even if all material needed by these two gas systems and their major suppliers is obtained during 1951, it is estimated, according to PAD, that there will be a deficiency on a peak day next winter of about 250 million cubic feet. If pipe and other materials are not obtained, the deficiency might run to a billion feet, PAD told DPA.

Total industrial load of these two gas systems on a peak day is about 725 million cubic feet. If this deficiency does amount to a billion feet, not only will all industrial consumers be curtailed 100% but there will be a deficiency of gas for service to domestic and commercial consumers, PAD said, pointing out that regulatory agencies require first priority for domestic users.

Coal Fights Gas Expansion

Gas spokesmen insist on the right of their industry to expand and market its product during the national emergency, despite opposition from the coal people who contend that steel should not be used to bring natural gas to areas where coal is available.

Paul Kayser, president of the Independent Natural Gas Association of America, suggests that the manufacture of synthetic fuels could be simply tied in to the enlarged gas transportation system—if the time ever comes when the supply of gas is exhausted.

"Despite the phenomenal increase in the use of gas during the last five years," Kayser points out, "the known reserves have increased more than 25 trillion cubic feet."

'End Use' Control on Oil, Gas

The coal people have made it clear that they hope for Senator O'Mahoney's fuels policy investigation to result in recommendations for "end use" controls on oil and gas.

Oil heat for homes is a "wasteful" use of petroleum, just like any other non-mobile use, the coal men declared at O'Mahoney's recent roundtable.

Coal men admitted their lost markets were due to the convenience factor (and undependable supply, an oil man added). But coal is necessary for defense. So, Congress should "do something" to help their industry.

Their arguments were based solely on the relatively small reserves of oil and gas compared with the 500-year supply claimed for coal.

In reply, petroleum spokesmen said oil and gas reserves were being found faster than they were being consumed and that petroleum reserves would be found in ever-increasing amounts for many years to come.

But the coal people have apparently made a dent. Defense Department has announced a policy memo requesting the armed services "to use the fuel in largest supply to prevent shortages."

A coal spokesman's remark that the independent producer "has always been in our corner" in fighting oil imports was denied by Ed Warren, IPAA president, saying his group opposed imports only in quantity that would hurt the domestic producer. He said he would not favor a 5% limit on imports now.

Top on O'Mahoney's agenda for the formal hearings on fuels policy, to be held later this spring, likely will be the "adequacy" of oil and gas reserves. Interior Department has filed a report analyzing data on reserves of oil, gas and coal which will be published by the committee.

No Danger of Rationing Seen

There is no danger of oil rationing unless there is a major war that would cut off imports from Venezuela and the other oil areas. Otherwise, the industry is geared to meet all demands of the mobilization program, as now foreseen, provided materials are available to carry out projected expansion. So spoke PAD Deputy Administrator Bruce K. Brown at a recent closed-door meeting of the House Commerce Committee.

Fuel Oil Margin Hike Urged

Mid-western fuel oil marketers are hopeful that the Office of Price Stabilization will act soon now to relieve them of the "squeeze" resulting from tankwagon prices being frozen before they had advanced their retail prices.

OPS officials expect to take up this and other inequities from the earlier "freeze" just as soon as the OPS order on wholesale (bulk) prices is out of the way.

A last-minute snag developed when the Department of Justice interposed objections to OPS using the "reference seller" system as an optional way of determining ceiling prices on tankwagon deliveries. DJ objected, unsuccessfully, to such a provision in a similar order by OPA in World War II.

Oilheating Shangri La

In a New Mexico Canyon Jim Breese has received 150 oilheating Patents

by
Robert Gray

AN INVENTOR AT HEART as well as by chosen profession, Jim Breese of Santa Fe, New Mexico, has probably been awarded more oilheating patents than any other single individual; there have been upward of 150 and all having some application in the pot-type or vaporizing burner field.

More than any other individual, Breese has been the father of pot-type burners. Fully five million American homes are heated with this style of oilheating, mostly in space heaters and floor furnaces. Two thirds of those units were built around Breese patents.

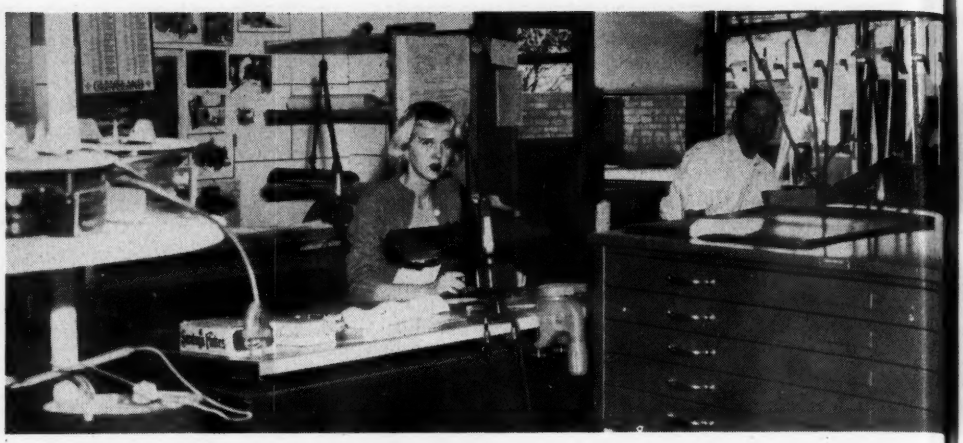
In case you should wonder why a man living in Santa Fe should take such an interest in oilburning, it wasn't that way at all. Breese was an oilheating man with a Chicago laboratory. He moved it to Santa Fe because he thought it was a much pleasanter place to live and, more important, it was away from the stream of commercial activity that is always distracting to a man dedicated to invention.

Breese has had an interesting record of experiences, going back before his oilheating days. Originally an automotive engineer and inventor, he had been one of the drivers in the Glidden tour of 1911, that pioneer reliability run designed to prove that cars were safe away from home. Taking a later interest in aviation, he was a crew member on the NC4 making the first trans-Atlantic plane crossing. For years he has been a polo player, still keeps a string of ponies at his ranch.

It was in 1929 that Breese was flying his own plane from Chicago out to Boulder Dam in Arizona. Fighting a stiff headwind he ran low on gasoline and put in at the small Santa Fe airport. Looking over the town while his plane was being serviced, he found it interested him as a mighty pleasant spot and he stayed a few days and made some acquaintances. Back in Chicago, doing original development work in the bustle of big-city noise and interruption, he couldn't get his mind off Santa Fe. The next year he went back and bought an attractive ranch in a canyon not far out of town, moved his

Lab office building, *top, houses general commercial offices, the archives rooms, the drafting room and a model machine shop at the rear. Remote from commercial machine shops, patterns and all other experimental machine shop products must be made at home.*

Ranch stable, *left, was earliest of the laboratory buildings and still contains the private inventor's workshop of Jim Breese, with a broad picture window at the north end looking up the canyon. This building also houses a group of firing units, as the chimneys show.*



Drafting room *in the main office building, where design engineers Louis Urwaleck and Clarice DeWick spend their days delineating new projects. The third member and head man of this crew is Byrd McKay, absent due to illness on the day of the visit.*

family into the ranch house and modernized an attractive low-slung stable for the first unit in the lab that was to grow with the years.

He left in Chicago his associates Stanley Perry, who is still with the group and now devotes his time to military orders, and M. D. Houston, who later followed to Santa Fe and now heads the laboratory activity out there.

Not a one-man Organization

While Breese has always been looked on as the inventor, which he is, and his laboratory out in the mountains visualized as a one-man affair, the impression a visitor gets is quite different. The office and lab buildings out at the ranch are significant for size and activity. There are at least a dozen persons on the staff there. In addition, Breese has in town a pilot plant employing another 15 or 20 men and women.

The pilot plant takes a new product from the lab and gives it commercial application. First several dozen models of the unit are made, to hunt for bugs. Then dies are made, right on the spot, for factory production of the model. Anywhere from 1,000 to 5,000 units are then made and sent all over the country. When the new product has had time to prove its worth under these many operating conditions, it is ready for commercial exploitation, which usually means that the organization makes some kind of manufacturing deal with a large factory in the Midwest or East. During the war, quite a lot of army heating equipment was made in the pilot plant, and just now some of that work is again in the plant, but not big volume work.

For example, Breese made several hundred thousand 10-inch pot burners in the last war for the army to install in its cast iron tent heaters, after coal had flopped on this job. Actually, his plant did not make them. His group developed the burner, got the orders and farmed them out to big plants. Just now he has another order for a hundred thousand of these tent heaters and those are being made in two Midwest plants.

To transmit his brain work and that of his staff into commercial returns, to get cash to keep the pot boiling, Breese has used several avenues. In a few instances he collects a small royalty to license the manufacturer to use the patents involved. More often, however, he prefers to sell one patented part of the burner or unit to the manufacturer of the heater. His profit in that part is his royalty on the patent.

It was surprising to learn how little he actually collects in this way on each unit. To use the most common example, he sells to manufacturers of space heaters and floor furnaces the 10-inch burner pot and flame ring at prices ranging from about $2 to $2.50 depending upon total numbers bought to date. These pots are made for Breese by Columbus Metal Products Co., Columbus, Ohio. Thus his license royalty is represented by his profit on these parts. It cannot be large.

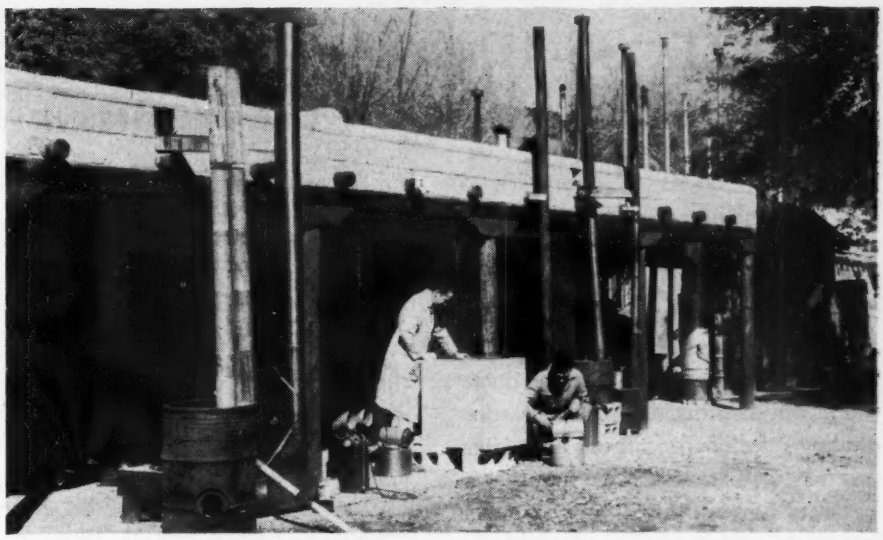
Selling at Low Price in mass Market

Asked why the charges were so modest, there are at least two good reasons. First, some of the earliest patents go back to 1925 and their protection period is running out. Later improvements on these same patents are of course still valid, but if royalty charges were high there would be more of a tendency among manufacturers to try and work around them. Breese wants to be recognized as the pot-type burner industry's inventor.

Then he has a strong feeling that the strength of pot-type equipment lies in its ability to open up oilheating to millions at low income levels. He wants space heaters, floor furnaces and other styles of vaporizing burners to sell at low prices in a mass market. That is nearly always the true ambition of the

Archives room *in the laboratory office building, showing two of several shelf units filled with models and experimental pieces for the early patents. In the photo are M. D. Houston, general manager of the lab, and Mrs. Hank Kelley, office manager. Mrs. Kelley's husband, lost in an accident in 1948, had been a career man in the diplomatic service. She has just had a book published, "Dancing Diplomats," describing their experiences in foreign countries, primarily Peru.*

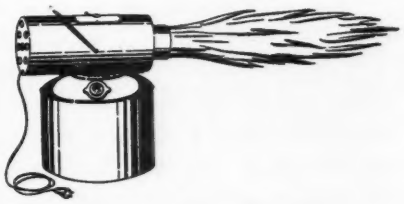
Laboratory building *in a New Mexico canyon two and a half miles out of Santa Fe. Because of a very favorable climate, experiments are often conducted in the open. Lab technicians Charles Mueller and Leon Wilson are examining an army oilheating unit.*

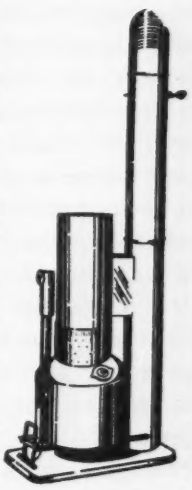


inventor, that millions shall use his product because they can afford it.

Few men in the oilheating industry have the opportunity to work and live in such pleasant surroundings as do Breese and his staff. Santa Fe, at 7,000 feet elevation in southern mountains, is not even located on the main line of the railroad named for it; it's on a little spur line from the south. The town's public square, or plaza, dates from the early visits of Coronado and the Conquistadores, the Spanish adventurers and explorers that followed Columbus. Along one side of the square, now a museum, is the Palace of the Governors, built in 1610 or 10 years before the Pilgrims landed at Plymouth Rock. Until 1910 it was in continuous use as some sort of government building.

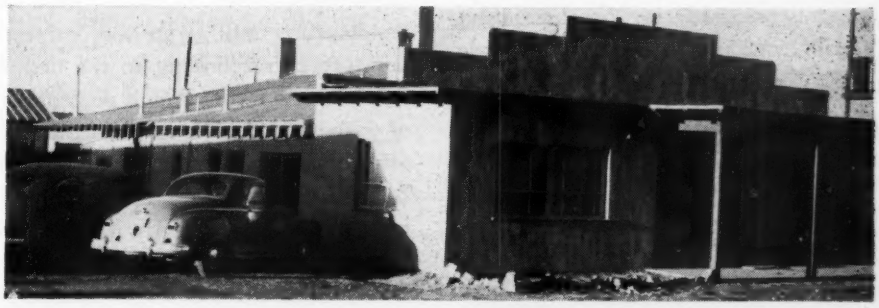
It's an artists' and writers' country, a scientists' and inventors' country, a country where thinkers can work at their best, if they have the courage and imagination to recognize it, as Jim Breese did.





Special heaters *for many applications on the farm, in building operations and in the armed services . . . two late developments from the lab, now being manufactured at the pilot plant. The unit at the right is a portable space heater weighing only 24 pounds and delivering 35,000 Btu from fueloil. The upper illustration is a portable blower type heater, delivers 100,000 Btu from gasoline and among other uses is popular for snow melting in Arctic regions where the army units have no other source of water. Both of these heaters employ "generator" burners, in which the flame is right on the surface of the fuel supply in the tank. The space heater has bi-metal thermostatic control. The other one will operate without the blower, but with less heat output.*

Pilot plant, *located in the town of Santa Fe, was originally built for making test runs of a thousand or two of each new product, to work out the bugs by actual shop and field practice. Today in addition to that proving activity, it also manufactures special orders for the armed forces, where the quantities are not too large. Just now it's turning out 18,000 special burners for immersion heaters used for army water heating and also making the small booster units to bring forced draft to pot burners. As a pilot plant it was naturally planned to operate at a loss, but with the special production today that concept is changed.*



Assembly line *in the pilot plant where 5,000 a month of the special boosters, or small blowers for floor furnaces, are being turned out. Selling to the manufacturer for $5, these boosters assure ample draft under all conditions for most effective combustion in the pot-type burners. In the background is Nelson A. Walker, works manager, and in front is T. F. Thomas, who actually pilots the new products, finding best applications and market possibilities.*

Progress in warm air Heating

Conclusion: Outside air, controls, zoning and other components

by
Robert C. Ring

THE FIRST TWO articles included descriptions and illustrations of a number of warm air heating systems as well as a discussion of grilles, duct-work, air distribution, etc. This concluding installment will take up other components of a complete system.

Basically, a warm air heating system is one in which air is heated by an energy exchange process, either directly by a warm air furnace or indirectly by a steam or hot water coil supplied with energy from a boiler; passed through the distribution ductwork, either by gravity circulation or by pressure from a fan; discharged into the heated space or spaces; and returned, in whole or in part, to the heat source.

In such a system, it is generally desirable to introduce a portion of fresh air directly from the outside to mix with the return air from the heated space and the mixture then passes through the heat source and into the system. The use of fresh outside air has several advantages, such as minimizing, or reducing to acceptable limits, the devitalization of the air that occurs due to the concentration of odors, smoke or moisture; reducing or eliminating the infiltration of unheated outside air around doors and windows by pressurization so that leakage is from the heated space to the outside; and better distribution of heat in the spaces.

Amounts of outside Air

The amount of outside air introduced into a system depends upon many factors such as the nature of the occupancy, climate, quantity required to maintain acceptable contamination limits, fuel cost, Code requirements, etc. Residential systems, in general, are satisfactory with a relatively low percentage of fresh air since the cubic feet of volume per occupant is high. Auditoriums, classrooms and spaces with high occupancy require larger amounts of fresh air although the percentage may be relatively low due to the large volume of total air circulated. Many states and cities have Codes which define minimum acceptable ventilation standards covering both total air volume and the amount of fresh air; where no standards have been set by Code, published data such as that in the ASHVE Guide is available. When fuel economy is of prime importance, the system must be designed for minimum fresh air volume since heating large amounts of cold outside air adds considerably to the total heating load.

Use of Economizer System

In order to take advantage of a high percentage of fresh air coincident with reasonable fuel consumption, the economizer system can be used. This arrangement utilizes a separate exhaust fan, in addition to the supply fan, with thermostatically controlled dampers in the exhaust duct and fresh air intake so that as the outside temperature decreases the dampers reposition to increase the proportion of return air and decrease the proportion of fresh air until at the design minimum outdoor temperature, the system operates with a minimum percentage of fresh air.

Conversely, the proportion of fresh air increases with increasing outdoor temperature until at an outdoor temperature corresponding to the design indoor temperature a high percentage, or even 100%, fresh air is introduced into the system. It is also possible, and for many applications better, to control the proportion of fresh air by occupancy as well as outdoor temperature so that the minimum percentage of fresh air is increased with increasing internal load. The mixing of cold outside air with return air in a system subject to considerable internal load improves the system response and permits better temperature control.

An exhaust fan is not commonly required in warm air heating systems except for the economizer arrangement or in applications where mechanical exhaust is required by Code or where necessitated by special conditions such as found in industrial applications. A relatively small percentage of outside air, and not appreciably in excess of normal infiltration amounts, will relieve itself through cracks and openings around doors and windows. High percentages or 100% fresh air can be relieved by supplementary pressure relief openings which can be located in much the same manner as conventional air returns and serve to remove accumulated cold air by displacement or to provide air circulation.

To illustrate: A system was designed for two gymnasiums now under construction wherein four unit heaters are suspended overhead from the roof construction, one at each of the corners. Two heaters, at diagonally opposite corners, connect through ductwork and filters to the outside and use all fresh air; the other two, at the other diagonally opposite corners, use all recirculated air. Since the percentage of outside air is high, pressure relief openings are provided at two locations in each of two opposite walls, the openings being low wall to facilitate removal of the accumulated cold air at the floor level. Two propellor type exhaust fans are located at the high point under the roof, one at each end of the building to sweep the ceiling area and minimize the accumulation of smoke. This arrangement provides both a heating system and a ventilating system with approximately 50% fresh air and additional mixing of air by the two recirculating units. The recirculating units add heat only if the two fresh air units cannot maintain the temperature as determined by the thermostats.

Warm air radiant Panels

This discussion of return and exhaust air applies also to warm air radiant systems except, of course, to the system wherein all of the air is returned directly from the panels to the heat source without entering the heated spaces and no outside air is introduced into the system. In the radiant system described in the first article, all outside air is used and this air is relieved in the heated spaces through pressure relief openings located in the wall near the

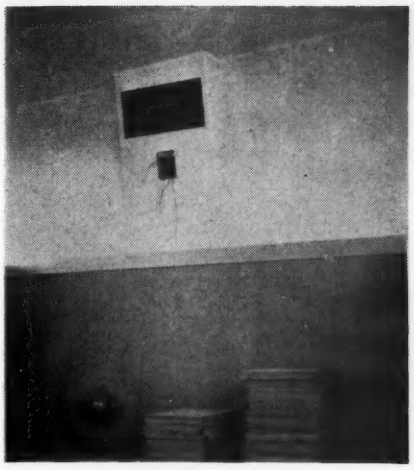


Fig. 1

ceiling. As in conventional systems, relatively small amounts of excess air can be relieved through the cracks and openings normally in the structure.

The construction of pressure relief openings, beyond the requirements of weather proofing, is largely a matter of appearance. For commercial and institutional use a conventional return type grille on the interior wall and a weatherproof louver on the exterior wall is generally satisfactory. If desirable or necessary to have the opening closed when the system is not in operation, a self closing louver damper can be installed between the grille and louver. However, unless the system utilizes continuous fan operation the opening and closing of this louver with fan cycling may cause noise.

Figure 1 shows a type of pressure relief construction which has been successfully used on a number of installations. The air space is formed partially by the space between the wall studs and partially by the inclined surface in which the opening is located. This space extends through the roof and the roof opening is covered with a sheet metal roof fitting flashed into the roofing and provided with a cap or hood to keep out rain or snow. The inside opening is covered with a conventional return type of horizontal bar grille with the bars at an angle.

The types of controls and control circuits for the various systems range from the simple on-off thermostat controlling the starting and stopping of the burner to a completely modulating arrangement wherein the heat output is modulated by both inside and outside temperature and individual zones are modulated according to the exact requirements of the zone. For residences and other relatively small applications wherein the occupancy is limited or wherein close temperature control or individual room or zone control is not required, the on-off thermostat, perhaps with a heat leveling or heat anticipating feature, is commonly used and generally satisfactory. If the system utilizes a boiler, a certain amount of flywheel effect is obtained by the mass of the boiler and its water content which in effect levels out, to some extent, the extreme peaks and valleys of the burner on-off cycle.

On-off and step-rate control can be improved by the use of an electronic

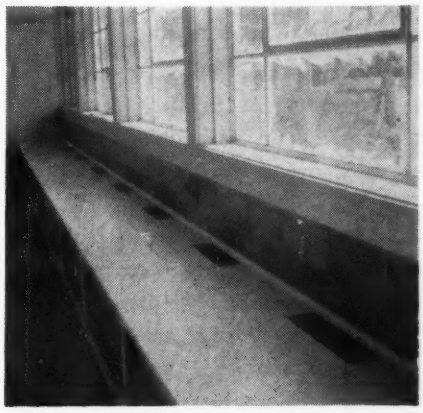


Fig. 2

control system wherein two or more thermostats, or sensing elements, are connected with a master controller which averages the temperatures of the several sensing elements. In this way, spaces which tend to overheat can be averaged against underheated spaces resulting in a more uniform overall temperature gradient throughout the heated areas.

Systems which both heat and ventilate generally require more than on-off control to maintain acceptable temperature variation in the heated spaces. With a steam or hot water boiler connected to a heating coil in the air stream, modulating control of the coil is readily possible by modulating steam or water valves. If necessary or desirable, the coil can be further controlled by an outdoor controller to modulate the coil output in accordance with outdoor temperature and provide a heated air supply which will also modulate with outdoor temperature and thus permit closer control of the space conditions. If two or more zones are involved in the system, zone control can be obtained by individual coils individually controlled, one for each zone, or by a single coil serving several or all of the zones with individually controlled dampers to regulate the mixture of heated and by-pass air as required by each individual zone.

Direct fired warm air heating equipment does not, in general, lend itself readily to modulating control, but some degree of step-rate control is possible. Usually this type of equipment is used where close control of the space conditions is not requred.

Warm air radiant systems, due to the relatively large thermal inertia of the floor slab or panel through which the air passes, will generally yield satisfactory results with only on-off or two step control. The mass of the panel serves to both cool the hot air from the heat source and heat the air somewhat when the heat source is off so that the air entering the heated space varies little compared to the variation in temperature at the heat source.

The two step control contributes more towards fuel economy than reducing the temperature variation in the heated space although closer control is possible than with simple on-off burner operation. All of the warm air radiant heating systems, such as described in the first article, utilize two stage control of the heat source. Tem-

Fig. 3

perature studies made on one of the installations indicate an overall temperature variation in the heated space not in excess of the differential of the space thermostat. This variation is gradual and occurs at a uniform rate of approximately one degree per hour within the thermostat differential limits. The use of electronic control would probably reduce this variation to about ½ degree total, but since the rate of change is so slow the comfort conditions are satisfactory and the extra complication and cost of the more precise control can be saved.

With air for this system heated by steam or hot water coil, simple modulating control of the heating coil would provide acceptable space temperature variation assuming a reasonably close differential in the space thermostat. Outdoor reset could be added with probably some saving in fuel consumption and a further refinement of the space temperature control.

Systems with 100% outside Air

In systems utilizing a high percentage, or 100% outside air, some method of low limit control is essential to avoid the introduction of excessively cold air into heated spaces with resulting impairment of space comfort conditions, particularly when the outside temperature is low. This condition can and does occur when the space thermostat is momentarily satisfied and the heat input to the air stream may be zero or nearly zero. This low limit control can be a thermostat in the supply duct to cycle the burner to maintain a predetermined minimum supply air temperature; it can be a thermostatically controlled source of heat in the fresh air supply to establish a minimum fresh air temperature or a limit in the zone damper control to position the dampers so that the temperature of the mixture of heated and by-pass air does not drop below the predetermined setting.

In the warm air radiant systems this low limit consists of a thermostat in the supply ductwork, which cycles the burner at reduced rate to maintain a minimum supply air temperature. The appreciable flywheel effect of the floor slab serves also as a low limit control, but the burner is cycled to prevent cooling the slab too much and to maintain

Fig. 4

a more constant slab temperature. In general, furnace systems do not require low limit control since the air is not circulated until the bonnet or combustion chamber reaches a temperature above the room temperature at which the thermostatic fan switch cuts in.

Zoning is required to maintain close space temperature control in applications wherein appreciable variations in internal, external load or both occur from one portion of the structure to another. This zoning may be accomplished by separate furnaces for each zone, by a separate steam or hot water coil for each zone or by dampers controlling the mixture of heated and by-pass air for each zone with a single coil serving all or several zones.

Large multizone Installations

Large multizone installations generally utilize either the second or third method, preferably the third, since it permits closer temperature control and lends itself to all year systems which heat, cool and ventilate. Large residences which may require more than one furnace due to the size of the heating load, or due to the spread out construction, can be provided with zone control simply by utilizing each furnace for a portion of the structure.

This arrangement can be applied to small commercial buildings as well such as, for example, a County Building divided into a portion for the Sheriff's Sub-station, a portion for the County Health Department and a portion for the County Court. Each of these areas has an entirely different function and each should be equipped with its own furnace, air distribution system and thermostat.

Fan operation in warm air furnaces in the vast majority of applications is a cycled operation wherein the fan runs only after the combustion chamber or bonnet is sufficiently hot and continues to run briefly after the burner shuts down. Generally, the fan control should be set to permit the maximum possible percentage of fan on-time to minimize stratification of the air and cooling of surfaces which have been warmed by the heated air.

Combination Heating and Ventilating

For systems wherein ventilating as well as heating is provided, continuous fan operation is necessary to maintain ventilation performance. With continuous air flow, the air entering the heated space must be diffused and distributed to avoid objectionable drafts because this air at times will be close to or below room temperature. This treatment of supply air should also be considered in systems wherein the fan is cycled, since to obtain a high percentage of fan on-time the air will at the start and end of the fan cycle be relatively close to room temperature.

Insulation is frequently taken for granted in heating systems and usually consists of the minimum covering required by Code. Good insulation not only offers year after year savings in fuel cost, but usually improves the system balance by reducing the uncontrolled factor of duct heat loss. Even where economy is the prime factor, good insulation is a small percentage of the total cost of the installation.

To conclude, a few additional pictures which were not available at the time of the previous articles: Figure 2 shows a typical cabinet arrangement through which ducts from the underfloor supply main pass or in which is concealed the header box used in the warm air radiant system. The individual grille openings are cut through the counter top and covered with a grille as shown is figure 3. Figure 4 shows typical recessed-in-the-wall duct extensions from the underfloor supply main at the outside wall. The grille opening is cut into these ducts and the grille mounted on the wall surface with the space between the grille and the floor covered by the baseboard.

Stopping for a chat *with Annmarjorie Gilmour in the OHI booth are, left, Paul Holmes, new chief of the Heating Branch, NPA, Washington, and Joe Murphy, sales vice-president of Taco.*

19th Oilheating Exposition Draws Industry to Chicago

IN A PERIOD OF high sales activity in the oilheating industry, while at the same time faced with considerable business uncertainty, manufacturers, dealers and oil men spent the week of April 2-7 at Chicago. Convention meetings of more than usual interest were exceptionally well attended. The Exposition out at the Navy Pier drew a considerably larger crowd than the last time at Chicago, in 1948.

The registered trade attendance in the first four days was 3,306. The final day's figure will easily push the total up to around 3,600, or 20% above the 3,000 registered three years ago.

Chicago never can quite reach the attendance of Philadelphia expositions, where they had 4,500 last year. The year before that, at Boston, there were 3,600 trade registrations.

Of course, the trade registration does not get all of the dealers and other industry people who attend. It is not necessary to wear a registration badge to get through the doors, so when the registration counters are crowded, quite a number skip the formality and pass in unidentified. This is true at all Oil Heat Institute expositions with the result that the totals would run a few hundred more than the official figure.

Omitting the compulsory registration is done to encourage the general public to come in and learn more about oilheating. The local industry men in Chicago, working through the Chicago Oil Burner Assn. and the Burning Oil Distributors Assn. raised $6,700 to publicize the show for local attendance.

As a result the aisles and booths were quite well filled during most of the hours.

Exhibitors in general spoke highly of the interest shown and were well satisfied with sales and prospect cards from the visitors.

Geographically, the attendance was more concentrated than usual. Of those registered, 75% were from the Midwest. Dealers in greater numbers came to the meetings, but fewer came from distant points. The table compares this exposition with the three previous ones on that point.

LARGER MIDWEST ATTENDANCE

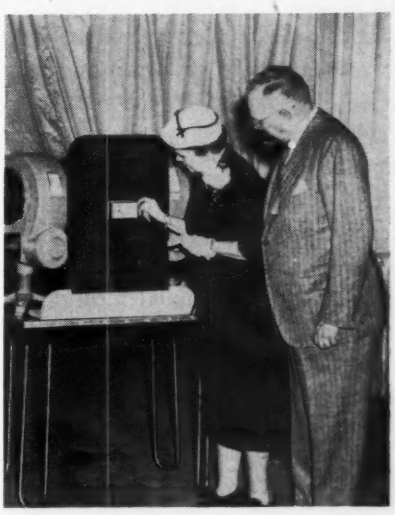
	Chicago Show 1951	*Phila. Show 1950*	*Boston Show 1949*	*Chicago Show 1948*
New Eng.	5%	15%	65%	6%
Mid-Atl.	15	61	21	20
Midwest	75	19	11	70
South	1	3	1	1
Far West	2	1	1	2
Canada	2	1	1	1

The annual exposition, in addition to its business sessions and gatherings in the booths, always highlights social activities among the men and ladies of the industry, many of whom see each other only once a year. High spot was the banquet Thursday night at the Palmer House, with 1,200 guests, E. N. McDonnell as toastmaster, and an excellent program of entertainment arranged by Jim Owens of Mercoid. After the banquet broke up, private parties took over and into the small hours.

Owens also raised the money from a group of accessory manufacturers for entertainment of the visiting ladies, including luncheons, fashion show, bridge party and matinees.

Tentatively a reservation has been made to hold the next exposition in 1952 at Philadelphia. A final decision on this will be made at the next meeting of OHI's board of directors, which is to be held in July at Portsmouth, N. H.

In the several pages that follow are reports of the important meetings with digests of the papers and talks given, a description of many of the new products displayed in the booths, and personalities scorched by Joe Keyhole.



Opening the Exposition . . . *Al Atwill, retiring president of OHI, watches as Mrs. E. Ross Carver moves a thermostat lever, starting two oilburners which will blow aside the curtains screening the show. Mrs. Carver is the granddaughter of Col. Drake who drilled the first oil well back in 1859 at Titusville, Penna. She flew from her home at Nashua, New Hampshire, for the event.*

Industry appraises the Future

Good sales Volume foreseen in spite of materials Problems

by
Bert Dunphy

A CALM BUT CONSIDERED appraisal of the future and what it holds for the oilheating industry was the dominating theme of the 28th annual convention of the Oil-Heat Institute of America, Inc., and the concurrent 19th National Oil Heat Exposition, held in Chicago during the week of April 2. Both were highlighted by lively interest and good attendance, with manufacturers and dealers alike agreeing upon the effectiveness of the equipment exhibits and timely subjects covered in papers prepared for the business sessions.

The Exposition took place at Chicago's Navy Pier, featuring exhibits of a hundred manufacturers of oilburners and accessory equipment, oil companies, trade associations and trade magazines. Convention and business sessions were held at the Palmer House.

President A. T. Atwill sounded the keynote of the Convention by predicting that up to 800,000 oilburners would be installed for domestic heating this year, with total sales limited only by the availability of materials and controlled quite largely by the amount of sales effort expended to meet consumer demand.

T. A. Crawford, vice president and general sales manager, Timken Silent Automatic Div., was elected president at the Institute's annual meeting on April 3; H. H. Wilkinson, Herco Oil Burner Corp. and P. K. Addams, Fitzgibbons Boiler Co., were named vice-presidents.

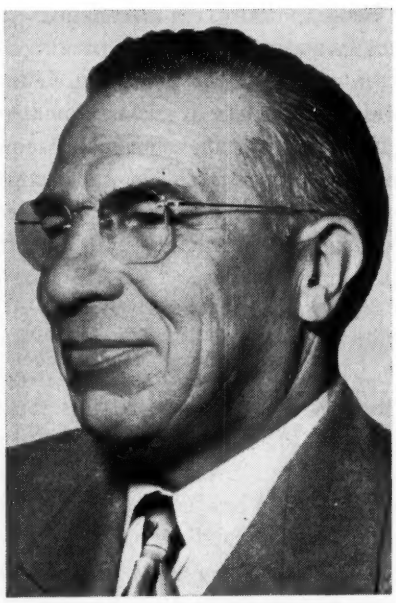
Elected to the chairmanship of the Accessory Division was D. G. Leslie, while J. H. B. Albert, Oil Heat Association of Maryland, was designated chairman of the Distribution Division.

The following five were added to the board of directors of the Institute: W. J. Smith, Jr., Toridheet Division, Cleveland Steel Products Corp.; Gabe Marin, Sun-Ray Burner Mfg. Corp.; B. F. Olson, Sundstrand Hydraulic Division; Scott Partridge, Oregon Heating Industries and W. F. Schierholz, Oil-Heat Institute of St. Louis.

Changes and additions to the Executive Committee were made to produce the following membership: A. T. Atwill, Quaker Mfg. Co.; R. S. Bohn, Preferred Utilities Mfg. Corp.; L. A. Casler, Eureka Williams Corp.; C. S. Dieter, Bethlehem Foundry & Machine Co.; J. W. Owens, Mercoid Corp. The chairmen of the Accessory and Distribution Divisions are included on the Executive Committee, as are the Institute's president and vice-presidents.

The annual meeting of the Accessory Division was held on April 2, at which time the Cole-Sewell Engineering Corp. and the Acme Electric Corp. were welcomed as new members. L. N. Hunter, chairman of the Engineering Committee, gave an extemporaneous report of committee activities and the meeting was closed with a standing vote of appreciation for retiring chairman Addams.

At the annual meeting of the Distribution Division on April 3 it was announced that a new chapter had been accepted, the Richmond Oil Heat Association, Richmond, Va. J. D. Lawrence is president of the local group; Edward Newman, vice-president; Marshall Field, treasurer and H. C. Green, secretary. The Division also named Scott Partridge as vice-chairman for the Far West.



T. A. Crawford
President, OHI

Industry Day Session

The morning session on April 4, Industry Day, was devoted to a panel of four speakers, discussing timely subjects. A. T. Atwill, retiring president of the Institute, acted as chairman and introduced Paul Holmes, chief, Heating Branch, Building Materials Division, National Production Authority, who spoke on the "Oilheating industry's partnership in defense."

He described the necessity for a partnership between industry and those charged with carrying out the objectives of the Defense Production Act and briefly gave a quick resume of NPA, its policies and certain actions taken so far, discussed the prospects for construction in 1951, explained the special situation of metal building materials and talked about priorities for construction.

He reviewed the considerations that govern NPA policy in establishing controls and briefly delved into the background, purpose and reasons for the Regulations and Orders issued to date.

As to the prospects for construction in 1951, Mr. Holmes said, ". . . the amount of construction which can go forward in 1951 will be some part of the remainder after the stockpiling requirements have been met." In other words, if military expenditures continue to rise, as they have been doing, and reach 50 or 60 billions for munitions and defense by next Christmas, our military machine and strategic stockpile will require at least one-fifth of rubber, metals and hard goods. Conceding that any attempt to estimate future construction volume involves a lot of guess work, Mr. Holmes drew the following rough conclusions:

1. The volume of private industrial construction, which in 1950 was nearly 1 billion dollars, in 1951 will be somewhere between 1½ and 2 billion; 2. the volume of public industrial construc-

L. to r.: *H. H. Wilkinson and P. K. Addams, vice-presidents, OHI.*

tion—military arsenals and Atomic Energy—will jump from about ¼ billion in 1950 to at least 1 billion and direct military and naval construction will increase 700 to 800 per cent; 3. total dollar volume of construction, considering present prohibitions and controls, will be off 2 or 3 billion dollars; 4. Despite this rather small drop, steel requirements for this year's construction will exceed 1950, with the result that further curtailment of construction may be necessary.

Mr. Holmes, discussing metal building materials, pointed out that the NPA has had to issue limitation orders curtailing the amount of aluminum, copper, tin, zinc and other metals which may be used in production of building materials, among other things. One prohibition, he continued, causes shortages in another field, with the result it was necessary to modify the copper order to permit the use of copper tubing in hot and cold water lines, but not for radiant heating, because it was not possible to step up quickly the production of galvanized steel water pipe. Also, he said, "We have permitted the use of copper tubing from the oil tank to the oilburner." As the defense tempo steps up, other prohibitions on ferrous and non-ferrous metals would seem to be indicated.

"Government, industry and public relations" was the subject of the next paper, presented by T. A. Crawford, vice-president and general manager, Timken Silent Automatic Division. He opened with the observation that we live in a re-armament economy, which will continue as long as we live, and that the members of the oilheating industry willingly and promptly will defer to the needs of re-armament to such degree as may be necessary. "All we want for ourselves is a fair break."

Oil-Heat Institute, as part of this program, has submitted to NPA a list of names as nominees for the Industry Advisory Committee to cooperate with NPA in determining the needs of the oilheating equipment industry in comparison with others engaged in supplying goods and services for civilian use. Mr. Crawford believes that short of an all-out war, "which in my opinion will not occur in 1951 or 1952," civilian production will hold at high, though not at boom, levels, with shortages felt most in raw materials, ores and fibres, and then in their products, steel, copper, aluminum, etc.

"Obviously in the oilheating industry we will face shortages of most of the materials we want, day after day in 1951 and through 1952 as well—but by the end of '52 we should be in position to have all the guns we need and all the butter we want.

"The causes of critical shortages of oil supplies during World War II will not recur—and, more importantly, our oil production facilities have been tremendously increased.

"One further reason we feel confident there will be no general shortage of oil barring a general war, is that the oil industry now receives monthly reports as to the extent of increased demand and its geographical location. This information is collected by OHI from manufacturers who build two-thirds of the country's burners. Still another reason is that as late as a few months ago, the oil industry had facilities available to produce 25% more oil than they were currently handling, and had the refining capacity and distributing facilities to bring it to market.

"And finally, the top brass of the petroleum industry has learned well the lesson that no circumstances can be permitted to deny several million home owners the oil they need for heating—for health and for comfort. It would be political suicide."

Contrasting the 3.3 million heating systems fueled by oil and gas in 1940, to the nearly 10 million now served, Mr. Crawford referred to the decline of coal and pointed up the fact is a serious competitor.

"Gas equipment outsold oil equipment in 1950," he went on, "and probably will do so again this year. Before the crest of the flood of gas equipment sales is reached, probably in 1953 or 1954, the total of gas installations will exceed the total of oil installations. However, experience has shown repeatedly that the public will buy oilfired equipment if these necessary favorable conditions are met:

"1. Fuel and service must be reasonably priced and competitive with gas.

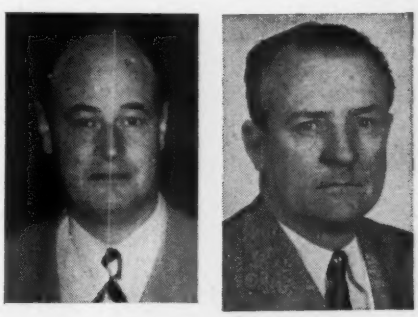
"2. Users of oilheat must be well treated, well serviced and thoroughly satisfied.

"3. Oilheat must be sold aggressively."

Our stake in this competition, he continued, begins with holding the business we have and converting to oil the 12.5 million homes where coal still is shovelled, plus the new homes to be built each year. "We can sell the market by doing all the things encompassed by a strong program of creative selling."

That program, concluded Mr. Crawford, will sell a huge volume of automatic oilheat. "The time to start is now, even though you may think you can easily sell this year all the equipment you can get. Put your merchandising house in order now and get a strong sales program started so you will own a market in years to come. The time to start is now."

The next speaker, J. Howard Marshall II, vice-chairman of the board, Ashland Oil & Refining Co., discussed "Fueloil in a defense economy" and blasted the groups which are trying to induce Congress to restrict by legislation the use of fueloil. Their proposals he said indicated that a group of us



L. to r.: *D. G. Leslie, chairman, Accessory Division; J. H. B. Albert, chairman, Distribution Division.*

has failed to do the job of refuting the underlying assumptions behind their efforts. The groups base their demands on the fallacy that there is an imminent danger of running short of oil and that solid fuels are in plentiful supply for an indefinite future.

"Even official statistics are confusing," admitted Mr. Marshall. "For decades and decades the oil industry always has had 15 years of known proved reserves at present rates of consumption. Solid fuels, for the most part, are close to the surface of the ground, being of the character that engineers can go out and look at and easily determine. You can get a reasonably good idea not only of the reserves from which you are presently producing, but also the reserves from which you will produce in the future.

"Oil reserves are down deep in the ground and until someone invents a gadget to actually read the amount of oil in the ground, the amount of oil reserves will remain an unknown quantity. To explode the fallacy we are going to run out of oil in 15 years, merely look at the stock market pages and read the prices of oil stocks. These prices obviously are not based on the opinions of financial people, or of those who deal in stocks, that oil companies are going to be out of business in 15 years.

"To find oil you must look for it and look for it in the most unexpected places. Repeatedly oil has been found where it is not supposed to be found. Scientific aids are important and essential, but the finding of oil is a risky business and there is a lot more to it today than scientific aids."

As an illustration of the risk element, Mr. Marshall cited the instance of Scurry County, Texas, where fairly recently a huge pool of oil was located; this, despite the fact that another company previously had thoroughly explored the same area, had drilled numerous exploratory wells and had completely missed the deposit.

Known proved reserves mean only one thing, said Mr. Marshall, "the stuff that will come out of all holes as estimated by engineers from holes which are producing oil on the day they make up the figures." Traditionally engineers who make up these estimates are asked to make them on a conservative basis and they do it that way.

Fuelcil in relation to the defense economy should be judged solely on its merits as an efficient fuel, continued Mr. Marshall. On the basis of relative efficiency, he added, it is clear that the fuel that uses the least manpower and is the easiest to transport, with the possible exception of gas in certain places, is fueloil. Once an oil well comes in, for much of its life it flows and one man can take care of many wells. Nearly all its transportation and pumping is done by automatic machinery, in its processing relatively little labor is involved and it likewise takes a lot less manpower and time to pump the fueloil into the customer's tank than it does to shovel coal.

Efforts to convert oilburners to coal in the last war, declared Mr. Marshall, reaped little benefit and if more had been converterd the burden placed on the railroads to move more coal for domestic heating would have been almost insurmountable.

"Actually," he said, "our greatest security as regards oil, and particularly

fueloil, in the defense economy is not relatively small or restricted consumption, but rather consumption of the largest amount we can get.

"The thing that finds oil is the incentive to find it and the things that have created the incentive which has made the demand are internal combustion engines and oilburners. If the demand is there and continues to increase, our scientific aids are so that great that the demand finds supply. The law of supply and demand works both ways. Not only does an excess of supply tend to create demand, but a large demand works clear back to the oil fields to induce people to chase supply because if they find it they can make some money out of it.

"If we seek to throttle by legislation the use of fueloil, I think it will be the greatest deterrent upon the continuation of our finding oil."

Edward McFaul, consultant to General Motors Corp., concluded the morning's program. He covered the vital role of human relations in contacts with people, using everyday instances to point up his talk.

"How confused can you get" was the theme which he opened with the expressed belief that there probably was no normal man in the room and perhaps 91% were semi-insane. From there he proceeded to a discussion of how unfairly the world traditionally has treated normality and presented a number of "normal abnormalities" for the audience to use in judging itself.

In a dynamically humorous presentation Mr. McFaul polled his listeners if they ever succumbed to a feeling of being inferior, if they had any fears, memory lapses, disillusionments, were discontented, felt they "were getting nuttier than a fruitcake," tended to rationalize their actions or were plagued by religious perplexities.

Taking all eight conditions, Mr. McFaul dealt with each individually and by working in examples of how they fit into our daily doings, showed that some of our greatest handicaps were a matter of mind or misinterpretation of values.

The Dealer Day session, held Thursday morning, April 5, was conducted by F. C. Haab, retiring chairman of the Distribution Division. Among the four papers delivered was one by Carl B. Jonswold, Arrow Petroleum Co., on the subject, "Fueloil supply and problems in 1951." He observed initially that the fueloil business traditionally has been going "from crisis to crisis during the past ten years," citing rationing, supply shortage scares and similar situations.

Dealer Day Speakers

In analyzing some of the problems facing the fueloil and equipment dealer and their solutions, Mr. Jonswold strongly advocated membership and participation in the local chapters of the Distribution Division of the Institute. Speaking specifically of the Midwest, he described how "free enterprise in action" during the past winter enabled the industry to work its way out of the difficulties precipitated by unexpectedly severe weather, plus the railroad strike.

About government control, he said, "I believe that we can expect some regulations which we will not like or that we believe will hamper us unduly. We should, however, accept the situations we face and do what we can to make them workable. There are many capable and conscientious industry men serving in our government, either on a full time or part time basis. Many of them have nothing to gain by serving in these posts and we should be grateful that industry men will accept these difficult assignments."

He expressed the belief that the industry will get a fair hearing and quoted the statement of Bruce K. Brown, deputy administrator of the P.A.D., which said that it was the agency's intention to issue as little restrictive regulation as possible.

The question of oil margins was next in the discussion and Mr. Jonswold indicated, "There is some merit in holding margins below what they should normally be expanded to based on dollar values. Margins should not be set to protect poor management. The industry can serve itself best by remaining cost conscious. It is well to find better and cheaper ways of doing business. It is the foundation of our free enterprise system. It permits the American public to buy our products. Basically, however, all segments of the petroleum industry should be permitted to share equally in earnings on a dollar of sale and the subject of margins should receive some dispassionate study."

To make effective a program of cutting costs, the following were advanced as points that individual dealers must analyze closely:

"If you have a bulk plant, do you need one or can you haul your material direct from your supplier's?

"If you have one bulk plant, should you have two or three bulk plants to cut traveling time on your trucks?

"If your business has expanded to the point where you feel you need another plant, could you do it better, that is, cheaper, and serve your customers as well, by buying larger trucks? The trend is toward larger trucks and, in Chicago, toward less bulk plants.

Record keeping should be as simple as possible, remarked Mr. Jonswold, consistent with good business practice and much more consideration should be given to selective hiring and training of employees. This last point should apply as much to clerical employees as to drivers, servicemen, salesmen and other employees. Continuing on the discussion of how to cut costs, the question of manpower was covered. Looking at it from the viewpoint of present day conditions and the possibility that manpower availability will become more serious in the future, he said, "We can overcome this to some extent by selecting and training to secure more work per employee. We also can employ older people.

"We must be alert to find better and cheaper ways to serve our customers so that we can give them comfortable, carefree automatic oil heat at the lowest possible cost.

"We shouldn't remain satisfied with ourselves for long. Times change and so should we."

Mr. Jonswold concluded by tracing the growth of the fueloil and oilburner industries, contrasting the number of burners being supplied today with the number in use only a few years ago and declared we can face the coming season "with the confidence that the responsibility and the opportunity of serving the American public will be discharged. No one company can do

it—no one segment can do it—collectively, we can. We can do it by working side-by-side against competitive fuels, against those who might try to legislate against us, against those who might try to restrict imports of petroleum. We can do it by building storage if that is possible, by utilizing the storage we have to the best advantage, by filling customers' storage as early as possible and by improving our trucking facilities."

A second paper at the session was prepared by Robert Gray, editor, FUELOIL & OIL HEAT, entitled "Looking ahead with oilheating," in which he said:

"Last year our total oilheating installations were about 847,000. Factory shipments were away above that, or about 926,000. The difference was mostly in building up dealer stocks. To make a very brief forecast on this year 1951, factory shipments will probably be off 15% to 20% because of the materials limitation orders from Washington. That would pull them down to around 750,000. Your actual installations in homes won't drop that much, because you have built up such big inventories. At the first of March you had 141,000 oilburners and units. A year ago you had 51,000, so your stocks are 90,000 higher than they were last year.

"Your own business, then, the business of actually installing burners in homes, can be as good as last year. Most dealers expect that it will be. It probably will be if you put the same amount of effort into it. You've got a grand start. The first two months were up 27% from a year ago, but you can't hold that lead when materials tighten up late in the summer."

About the materials situation, Mr. Gray said that right now less than 2% of the installations are not being completed because of shortages, and he believes that as soon as the building up of inventories levels off that the industry "and all other civilian industries are going to settle back to a modest scale of buying. Then it will be easier to get the things you need right away."

Some important thinking about the fuel side of the business seems more in order, he continued, saying that for now, the quality of heating oils is showing a marked improvement over a few years ago and cautioned that if we should be forced into a big world war, the gravity of heating oils, of necessity, would drop and "we'd have again an oil with more Btu's, harder to ignite." The bigger problem, though, is "how to get enough oil made and at the right time." This is not a matter of lack of refinery or crude capacity, but rather stems from business practices in the oil industry, established over a period of years and resulting in habits that change very slowly.

Most encouraging ray of hope in the situation is the gradual change in the attitude of top management in the oil industry, recognizing the potent force represented by oilheating. Describing this as "the coming of age of the third cycle of petroleum history," Mr. Gray pointed out that kerosene, the earliest oil industry product, held its predominance until about 1910, supplanted by gasoline for the next 25 years and next by the fueloil cycle, which began in 1935.

Another habit that is beginning to

plague the oil industry is its tendency to operate on short capital, and keep inventories as low as possible. This worked well with kerosene and gasoline where demands could be predicted rather closely, but because fueloil demand is tied so closely to unpredictable weather conditions, guesses must now allow a latitude of about 20% to account for colder or warmer seasons.

Applying these tendencies to the last heating season, Mr. Gray went on, "Stocks of fueloil were very low all during the summer months. The stock build-up during three months was only around 90,000 barrels a day, and we went into the heating season lighter than the year before, expecting to take care of 15% more oilburners.

"At the peak of the last fall and winter season the refineries outdid themselves to catch up, running abnormally high fueloil percentages from each barrel. The winter was milder than normal, thank God. If it had been seriously colder than normal there might not have been enough fueloil. Plenty of crude, plenty of refinery capacity, plenty of everything else, but unfortunate industry habits.

"This year we have a tougher situation. We have all of the weaknesses of the former years, plus frozen prices. They were frozen at the wrong place, with No. 2 fueloil selling at the Gulf for 3½¢ under gasoline. Fueloil is at least a cent too low to be attractive."

The oil companies, Mr. Gray declared, because of the very fact that there are 34,000 separate individual corporations, cannot get together and divide the market responsibilities, because the Justice Department would not let them. A solution might be worked out through a tie-in between gasoline and fueloil prices, with one going up when the other comes down, and vice-versa, to achieve volume control through price adjustment.

Grouping oil, gas and electricity, as the three automatic fuels, and discounting the importance of coal for automatic heating, Mr. Gray reminded the dealers that convenience is the one big point of sale for all three. Today only about 40% of centrally heated homes burn oil, gas or electricity, and it's within the realm of possibility that that number will be doubled during the next ten years, because people like convenience and, as far as heating is concerned, associate it with a freedom from physical effort and the ability to forget about the heating system.

In the predicted huge volume of automatic heating to be installed within the next decade, Mr. Gray feels that oilheating will hold its lead. "Last year," he said, "gas outsold us, or at least they did in factory shipments. They had 977,000 factory shipments to our 926,000. But I'm still looking for that industry to taper off by next year. We'll probably beat them this year."

Natural gas competition cannot be licked without special effort and expense, but back in the 1930's, Mr. Gray stated, oilheating was sold on its merits and "Does it ever occur to you that half of the homeowners that are prospects for you today have grown to maturity and established their families since the days when you were actively glorifying oil heat? Little wonder then that the gas industry has been able to come along with something that looks fresh. Would it be not sensible for us to get back to fundamentals and do some of the old-fashioned selling in our communities, putting emphasis on the merits of our product, all very well known to us, but never heard by a good many of our prospects?"

A practical, workable industry effort was described in a talk by John R. Sherwood, Sherwood Bros., Baltimore, who described "The cooperative approach to meeting natural gas competition," as undertaken in his town. He told briefly of conditions in Baltimore under which the oilburner industry operates, explaining that nearly all fueloil and equipment dealers were on friendly terms, who engage "in wholehearted, vigorous competition."

The leadership of the local Oil Heat Association and the congenial relationship that existed among various industry elements, properly alerted local dealers to compete with natural gas when it "started knocking at our front door in Baltimore."

Approaching the situation in an orderly intelligent manner, steps first were taken to find out just what natural gas would cost the user, what kind of equipment was going to be available, what kind of service would be rendered, the element of supply, as well as the other factors that exist when two basic industries come into active competition with each other.

So, knowing that natural gas was due to arrive in Baltimore on May 1, 1950, an active campaign was begun by the oil and burner industry in January, 1950, with newspaper advertisements, captioned "Don't be confused."

"Our job, and, as we saw it, our responsibility," said Mr. Sherwood, "was to tell the people the truth and to lay the facts before them. The great and principal differences between the cost of natural gas at the rates that we knew were going to be charged for it, and at the prices we had reason to believe would be charged for fueloil, led to the inescapable fact that while natural gas costs less than manufactured gas, it still costs more than fueloil. On a fuel-for-fuel basis, there is a distinctly large difference in this cost."

Since advertising of all kinds costs money, a fund-raising campaign was a prime consideration in getting the campaign under way. The formula finally picked involved payment into the fund of 1/20 of a cent per gallon for all tank wagon deliveries and the fine response received to the appeal convinced the committee working on the plan that the industry as a whole regarded it as good "group insurance."

"With funds available," pointed out Mr. Sherwood, "we will have accomplished for the period January 1, 1950 to May 31, 1951, approximately the following:

"48 newspaper insertions averaging 1000 lines each.

"10,000 lines in local neighborhood newspapers.

"Several thousand dollars in direct mail.

"26 weeks of television, once a week, on a major station.

"Decals for all trucks, carrying the message, 'Oil Heat Costs Less.'

"Four outdoor poster board showings, 32 boards in April, 64 in May, 32 in September and 32 in October.

"Miscellaneous items to the extent of several thousand dollars."

Other activities included a big rally in March 1950 for the entire industry personnel, to acquaint them with the campaign, what was being done and

the advantages of oil heat over natural gas. Also, to be sure that outside men would all be telling the same story and telling it intelligently, an inter-company sales clinic was organized, wherein several meetings were held with salesmen for instruction in natural gas competition and to provide them a booklet of supporting data.

Results to date have seen only a negligible number of existing oil accounts lost to gas, a good level of conversion burner business maintained and some losses in new-house construction, where the gas company makes sizable allowances in the cost of running gas mains to new developments if the builders install gas heat.

Mr. Sherwood remarked that programs, such as the one inaugurated in Baltimore, are most effective when started early and with almost 100% cooperation. He advocated working together toward building a bigger and better total business so that each company's proportionate share will be larger and dealers will compete with each other to fight for that share.

"Oil heat is a great industry," he said, "it is fun; it is interesting; it is really exciting; it is helpful to people; it is decent; it is good! When we are faced with a competitive industry, operated through a utility with all of the power that the utilities can generate, it is only proper that we should band together, join hands, unite our forces, and go to bat for the people. It has been done, it is being done, and it can be done in the future. I urge all of you to be of stout heart and go to work."

C. T. Burg, vice-president, Iron Fireman Mfg. Co., was the fourth and final speaker, on the subject, "Beware of the three bad bogeymen." He gave the forceful, entertaining sales message for which he has become famous and told the story behind the gray suits and red neckties he wears habitually.

His entire theme concerned sales and the attitude that produces the best sales and the best salesmen. In forming a sales organization Mr. Burg emphasized a sales manager can wind up with a group of "No" men or "Know" men. The first group would be those who before tackling any sales problem would be beset by the negative attitude that comes from thinking it can't be done or the job is too big for the individual. The second group operates in an entirely different manner, spurred on by the confidence engendered by knowing that they have the knowledge and training to do the job they set out to do, if it's humanly possible to do it.

Analyzing the point more thoroughly, Mr. Burg said the only difference, actually, between the "No" men and "Know" men were the letters "k and w," and these bring to mind the abbreviation for the word "kilowatt," translated further into power, energy and, finally, work. So, a "No" man easily can become a "Know" man with the addition of some driving force, energy and exertion.

"The three bad bogeymen" who do more to destroy any sales organization than any other factor, he continued, are inertia, pessimism and delay. These were discussed individually at some length, with the antidote for inertia advanced as work and optimism, enthusiasm and aggressiveness the solutions for pessimism. The antithesis for delay, of course, is "Do it now."

Each "bogeyman," represented by a humorous cut-out figure, was placed on a table as it was discussed. "Cy Burg" red ties were awarded to those in the audience who were able to knock any one of them down with tennis balls that were provided near the conclusion of the talk. And, in summary, Mr. Burg emphasized that the "bogeymen" plague every salesman at some time or another, but, in reality, they are only cardboard cut-outs that can be knocked down and conquered.

Engineering Session

L. N. Hunter, vice-president, National Radiator Co. and chairman of OHI's Engineering Committee, presided at a session held during the afternoon of April 3. Six technical papers were presented, following the theme, "Engineering Looks Ahead."

First speaker heard was Glenn Seidel, Minneapolis-Honeywell Regulator Co., whose paper discussed "The purposes of field engineering." Thinking of the new products and improved techniques that will be evolved by research and development groups of the various organizations in the industry, he pointed out that the one thing that can stop this type of progress is the failure of engineering personnel to recognize problems and requirements, inability to work out technical solutions or transmit answers to the field.

The field engineer came into being during the last war as the Technical Representative, whose two primary assignments were to keep equipment working in the field and to continue the training of operating and maintenance personnel. In addition to providing engineering departments with specific information on equipment difficulties, he also reported from first-hand experience on the functional requirements for the equipment as it was being used. The success of this system resulted in the appointment of the Field Engineers of today to continue their useful work on civilian equipment.

The transition was not simple, but the basic concept, "that of establishing a direct line of communication between the home office engineering group and the field" was carried over into peacetime commercial operations.

Essentially the field engineer must keep home office engineers informed on product performance and application requirements, on design requirements, on trade practices that affect its use, on service conditions and on industry trends. He conducts field trials on limited quantities of new products before they are generally distributed, working cooperatively with his own sales force and the customer. In another function he provides technical aid to the technical sales organization.

Mr. Seidel described the relatively poor channels for transmitting technical information through the sales organization, whose members must, of necessity, concentrate on selling rather than engineernig, and the cumbersome method of sending the research and development engineer into the field, at the risk of preventing him from performing his primary duty of making design improvements and developing new products,

Then, in the light of the need for a good channel for technical information, he concluded the field engineer stands out as a happy innovation. "He is filling a gap that has existed for years, and in so doing is making it possible for the Research and Development staff to do a much more comprehensive job of product improvement and is helping to pinpoint the objectives of the development program through accurate, detailed and factual reporting of field conditions and providing a much needed technical service to the field sales and customer organizations."

H. C. Hunter, Gulf Oil Corp., the second speaker, discussed "Fueloil—today and tomorrow," reporting on the progress of technical developments that have improved the suitability of cat-cracked fueloils for home heating burners, coupled with a discussion of the shortage in volume of burner oils.

Today much of the fueloil used for home heating contains catalytically-cracked distillate, with capacity for this type of production showing an increase to 1950 thousands of barrels a day, compared with 122 thousand barrels per day in 1941. Two potential difficulties recognized in the catalytic processes were poor burning quality and instability in storage. Mr. Hunter reported that "both of these deficiencies have been overcome, the instability by means of applied chemistry and the burning quality by good work on the part of the oilburner manufacturers, aided and abetted in certain instances by some of the oil laboratories, in improved mechanical design and proper application."

He employed a series of graphs to illustrate that "Characteristic combustion curves for the three general classes of power-operated domestic oilburners to show that distillate fuels composed of 100 per cent catalytically cracked distillate can be burned in all of them without excessive smoke, soot or other undesirable effects." The curves covered high and low pressure burners and vertical rotaries.

To insure storage stability, Mr. Hunter assured his listeners that means now are available for producing sludge-free furnace oils containing cat-cracked distillate, of excellent all-around quality. The quality of "tomorrow's" fueloils will be contingent upon whether there is war or peace, he went on, which will bring about certain shifts in the production of petroleum products. Particularly because the volatility of cat-cracked distillates as commonly made preclude their use in No. 1 oil or kerosene, Mr. Hunter advised against the building up of a large demand for this grade oil.

In conclusion he discounted the possibility of requiring any customers "to convert back to the use of a fuel, the production of which can be turned on or off at the orders of an individual."

In a companion paper, C. J. Livingstone, also of Gulf, covered the predictions for fueloil quality during emergency and in the case of an all-out war. Discussing military and aviation requirements, he conceded that "If the demand for gas turbine fuel should reach proportions comparable with the demands for aviation gasoline of the last war, the oil industry may be hard pressed to supply a sufficient amount of this fuel and meet the demands for other products." And, because a considerable amount of uncracked light fractions now going into No. 2 fueloil might be required to meet military demands, the oil would tend to become heavier with less front end volatility.

Coupled with this would be an increase in service problems and more smoke and carbon deposits in burner nozzles, since chemical inhibitors probably would not be available in ample quantities under war conditions. And, since burner mechanics might be in short supply, it could fall upon the homeowner to take over some of the cleaning and servicing.

In closing, Mr. Livingstone stated that while "it is our belief that the fueloil supply might be tight during a war emergency, there should be adequate supplies to keep our homes livable if a sound conservation policy is followed. It is also our belief that fueloil quality would deteriorate markedly in a war emergency and that extraordinary service requirements may develop, some of which may have to be performed by the homeowner."

The third technical paper presented explored "Needed research in the oilburner industry" and was delivered by Bertrand A. Landry, supervisor, Fuels Research, Batelle Memorial Institute. He opened with the observation that from the wide acceptance of oilheating, there obviously is no major technical difficulty in the art of burning oil. Despite this, however, many oil companies and burner manufacturers are engaged in essential research work for the reason that they are aware that with today's competitive situations, "technical progress is necessary to hold and to expand markets.

From a list of requisites for burners presented, it was explained that a major requirement is the ability to control the air/fuel ratio, whereunder the rates of supply of both fuel and air must be independently controllable and the process of fuel atomization itself must be brought under control. After a discussion of the forming of a spray of droplets of oil for mixing with the stream of combustion air, and its inherent problems, Mr. Landry advanced the suggestion that a solution might be found in controlled preheating of the fuel just ahead of the nozzle.

On the subject of air supply and turbulence, Mr. Landry explained that turbulence is measured in terms of degree and scale—scale referring to the size of the rotational elements produced and degree to the total rotational energy involved. It is conceivable, he stated, that control of the scale of turbulence, within the limits of the degree of turbulence obtainable from a given blower and motor, by supplementing any control obtained of the atomizing process, would help considerably to achieve proper flame characteristics at low excess air. For spray studies, the study of turbulence scale would be aimed at developing a simple set of controls adjustable in the air-supply line during operation.

To achieve proper flame holding, where the flame attaches itself at the burner so that continuous spark ignition is not required and without damage to the burner or electrodes, it was suggested that significant data could be developed on the included solid angle of the spray cone, maximum distance reached effectively by the spray and the design of the lip or constriction at the mouth of the burners, all important factors in flame holding.

Pulsations occurring during burner operation, the next phase discussed, were described as resulting from the establishment of resonant conditions which amplify the effect of acoustical oscillations, with frequencies for which the amplitude of the sound exceeds that of the general noise level. Other types of pulsations are possible, declared Mr. Landry, but because definite information is lacking on the characteristics of oscillations from oilburners, "this would seem to be a very fertile field of applied research."

The final phase referred to concerned starting and shutdown problems. On starting poor performance apparently is related to insufficient heat to evaporate oil droplets, so that an initial spray much finer than that obtained under normal operation would seem to be indicated. Following shutdown, smoke and fouling conditions are related to nozzle drip.

The number of fields open to profitable research indicated, concluded Mr. Landry, must combine both an experimental phase, aimed at separating out the variables that must be brought under control and a fundamental or scientific phase aimed at a full understanding of the physical laws involved in each invariable.

"Progress in evaluating fueloils," a paper delivered by D. W. Locklin, project engineer, Timken Silent Automatic Division, was the fourth subject covered at the session. He reviewed the necessity for some means of evaluating the burning qualities of fueloils, including the Oil-Heat Institute's contribution to the program. The Institute began in 1945 to study the problem of a reference oilburner, designed for testing fueloils, and standardized in two forms. In the simple form it was to be arranged to be most suitable for testing the acceptability of oil by comparison with a reference fueloil and in a more elaborate form with additional instruments for analyzing various factors of combustion. Under the chairmanship of W. A. Bulger, an OHI Engineering Subcommittee designed the burner, designated the Combustion Reference Test Unit. During 1947, the American Society of Heating and Ventilating Engineers' Research Laboratory, under contract with the OHI, began a series of three investigations as a means of rating fueloils.

One test involved plotting smoke spot reflectances relative to clear filter paper against CO_2 under equilibrium operation conditions with ignition "on" and "off." It was observed that, besides a marked increase in smoke, the measured combustion air supply was increased slightly by switching the ignition "off," indicating that the position of the flame front, as influenced by ignition, has a definite bearing on combustion performance. To compare difierent oils on the basis of actual air requirements these data were plotted against excess air, or in terms of ultimate CO_2 of each oil.

A graph showing smoke plot reflectance plotted against CO_2, expressed as a percentage of the ultimate CO_2 for several oils tested, showed the Unit capable of distinguishing between the burning qualities of the oils. The results, examined to see whether a simpler test could be used as an indication of combustion performance, produced encouraging trends, but indicated that a greater number of oils and burners must be investigated before definite correlations can be established.

Other tests made on the effect of air shutter opening at a constant air-fuel

ratio, and assuming that air turbulence was greater with a smaller opening, indicated that as the amount of turbulence decreased, smoke and flame length increased, but CO_2 decreased. This suggests the possibility of evaluating burning quality of fueloil by varying the mixing turbulence at constant air-fuel ratios, and might indicate the degree of turbulence needed for each oil to attain a prescribed performance.

Mr. Locklin emphasized that starting and shutdown conditions were not fully studied during the tests, and said he felt to obtain a true picture of fuel performance under field conditions, investigation should be extended to the evaluation of fuels burned in intermittently-operated burners.

Further, experience with the Unit pointed out several factors which affect the application of test results and for which we have little fundamental knowledge, namely, ignition, atomization and air-fuel mixing, and Mr. Locklin declared that perhaps such fundamental research for oilburner application should be taken. Also, he suggested the establishment of a central agency for the coordination of research data available and the correlation and dissemination of technical information.

Howard F. Hinst, Babcock & Wilcox Tube Co., was the next speaker, on the subject "Care of tubes in oilfired boilers." He pointed out that corrosion is the major factor in shortening the useful life of boiler tubes and described the various types of corrosion that affect low pressure boilers, including the type used for heating. Atmospheric corrosion takes place, Mr. Hinst said, when steel is immersed in water which has been exposed to air and has a chance to absorb oxygen. It will not occur in clean, alkaline, freshly boiled water, if air is kept away. Fire side corrosion, the next type discussed, was explained as coming from moisture condensing from the atmosphere during periods of shutdown, or from flue gases during operation. This type of corrosion is troublesome in boiler installations near bodies of water or where the air is otherwise humid and is accelerated by the use of high-sulfur fuels. Pitting corrosion was described as probably the most destructive form of corrosion that affects the water side of boiler tubes, with damage particularly severe in fire tube boilers.

The rate of corrosive attack, declared Mr. Hinst, is increased by dissolved oxygen in the boiler water, taking the forms of air bubble pitting, scab pitting and soft scab pitting. Commenting on the fact that replacement tubes sometimes do not last as long as the original set, Mr. Hinst explained that obviously the environment or conditions under which the boiler was operated had changed. Perhaps the boiler had been fired immediately when the old set of tubes had been installed, while the new set may have lain in fresh water for sometime and air bubble pitting may have started.

Water line corrosion also was pointed out as being caused by excess oxygen in boiler water and in areas of very bad water conditions, the water actually may be acid. Making sure that the boiler water is sufficiently alkaline and free of oxygen prevents this trouble. In general, Mr. Hinst recommended the following precautions:

"1. Keep all boiler fittings and piping tight to keep air out as much as possible.

"2. Boil out the boiler with an alkaline cleaner such as tri-sodium phosphate or a combination of caustic soda and soda ash or one of the newer detergents currently being supplied. (Note: This should be done to new boilers also to remove oil or other protective coatings from tube surfaces, which will cause corrosion if left on the tubes.)

"3. Bring a steam boiler to a good steam output as soon as it is filled after draining to deaerate the water. Heat the water in a hot water boiler to 180° for the same reason.

"4. Add sodium chromate or caustic soda to the water.

"5. Preferably use a fuel with low sulfur content to avoid the corrosive action of sulfur gases.

"6. Brush and flush and dry out the insides of fire tubes as often as possible to remove soot and other products of combustion, and prevent the accumulation of moisture and condensed sulfur gases.

"7. In greenhouses or damp locations, put a tray of unslaked lime in the ash pit to absorb moisture, and close the boiler.

"8. Prevent water leakage and do not periodically drain water out of the system. These add to the necessity for the constant addition of make up water, result in loss and dilution of treatment and introduce air into the system."

R. A. Locke, manager, Steel Boiler Institute, followed Mr. Hinst with a brief discussion of the Institute's recommendations for water treatment of boilers. He strongly urged that the bolers receive an initial water treatment before being put into service, to be followed with annual treatments.

Mr. Locke told of the work a committee of the SBI, headed by L. N. Hunter as chairman, had done to investigate and develop a water treating compound and revealed that a satisfactory compound had been developed and soon would be available for distribution. Manufacturers will be asked to ship enough of the compound with each boiler to provide for initial water treatment, with the supplies for the annual follow-up treatments to be available from local sources. Mr. Locke emphasized that the product is not a cleaning compound but is intended for boiler water treatment and that the SBI would get no profit from its sale.

The final paper, "Combustion Products and Smoke" by J. A. Stein, Chief Engineer, Bacharach Industrial Instrument Company, discussed basic factors which affect the burning of fueloil, and significance and technology of testing combustion products.

It was pointed out that one important factor in burning fueloil is the proper inter-mixing of the vaporized fueloil with the oxygen of the combustion air. The more thorough this mixing of oil vapors and air, the less combustion air excess to be heated and lost up the stack must be supplied, and the freer of smoke will be the combustion products. Proper air supply is another important factor. If due to insufficiency of combustion air, or poor inter-mixing of this air with the vaporized fueloil, the hydro-carbon particles of the fueloil are not able to meet and unite with the required oxygen, smoky combustion results causing unnecessary waste of fuel and deposition of soot

upon heat transfer surfaces of the furnace which slows the absorption of heat by these surfaces, and atmosphere pollution.

While it would appear that smoke and soot deposition could always be avoided by supplying sufficient combustion air, well inter-mixed with vaporized fueloil, there are other factors which tend to cause a smoky flame such as flame impingement upon combustion walls or cool metal surfaces, improperly shaped or sized combustion chambers, worn or partially clogged nozzles, low fueloil pressure, improperly positioned or defective electrodes, poor cut-off valve action, etc. This means that it is often necessary to do more than merely increase combustion air in order to obtain a clean flame; in fact, one may increase the air supply too much with corresponding heat losses without adequate compensation in reduction of smoke. Therefore, a compromise must usually be made between the desired high per cent CO_2 and the desired low smoke density.

In discussing the significance of testing combustion products the paper covered in considerable detail the practical importance of measuring smoke density and the technology of smoke measuring means, including the now widely used filter paper method proposed by Dr. Owens back in 1913 and recently made commercially available as a result of extensive research and development work done cooperatively by Shell Oil Company and Bacharach Industrial Instrument Company. This method involves drawing a sample of flue gas through a standard grade of filter paper. The color of the resulting smoke spot on the filter paper is then matched to the closest color spot on a graded and numbered color scale. This filter paper test method can be used for both precise laboratory investigations as well as for fast field checks and burner adjustments.

Accessory Division Luncheon

The second Accessory Division luncheon, at which Paul K. Addams, Fitzgibbons Boiler Co. and retiring Accessory Division Chairman, presided on April 4, was another successful affair. It featured as a speaker Charles C. Wright, business economist of the Federal Reserve Bank of Chicago, who talked about "The economics of partial mobilization."

He expressed the opinion that it is becoming increasingly apparent that world power and the ability to maintain peace are based upon productive capacity and asked, "Can American business, and the people generally, adjust to the changing probabilities of war, from cold to hot and back to warm? Can this nation meet the demands to be placed upon its productive resources and at the same time control inflation?"

More productive facilities, immediate expansion of military production and maintenance of civilian production, Mr. Wright pointed out, are three needs that comprise the core of the production problem and the significant point about the companion problem, inflation, is that there will probably be fewer goods produced this year, but there will be more money.

He listed the following elements that, "unless subjected to reasonable controls, would cause inflation to be dominant for a long period of time":

a. Foreign commitments upon American production will continue to be very great.

b. Domestic demands upon our productive system are much greater than comparison with the past suggests.

c. The American economy contains built-in inflationary forces, such as wage contracts with escalator clauses and parity formulas.

d. Policies of easy money on the part of Government, and

e. Easy policies with respect to private credit.

Inflation control, Mr. Wright said, must aim at stability and not collapse, with "the purpose of price, wage and credit controls to reduce the inflationary pressure resulting from these credit extensions and to ease the demand for materials needed for the defense program, not to put business men out of business. In a like manner, policies designed to cut down the availability of bank credit, are designed to reduce the underlying pressures on the money supply, but not to go so far as to induce deflation and unemployment."

"A relatively stable price level is much to be preferred over one which rises to unwarranted heights and then falls to unnecessary depths. Intelligent monetary and fiscal policies and other properly administered inflation controls, supported by a well-informed public, will make such a goal reasonably attainable."

Social Activities

The week's social activities again were highlighted by a varied ladies entertainment program, including luncheon and card games on April 3, another luncheon and style show on April 4. In addition, drawings were held for tickets to South Pacific and a movie and stage show. Mrs. J. W. Owens was chairman of the arrangements committee, aided by Mrs. Charles Cochran, Mrs. Helen Kemp, Mrs. A. T. Atwill, Mrs. H. Kucera, Mrs. Don G. Leslie, Mrs. W. A. Matheson and Mrs. Harry Shaffer.

The Old Timers gathered for their annual dinner and entertainment on Tuesday evening, April 3, during which H. E. "Chappy" Chapler was honored with a Life Membership. Major award of the evening was made by W. A. Matheson, toastmaster, when he presented Dick Bohn with an over-sized microphone. The resignation of Jim Owens as national chairman was rejected by the assemblage and he is continuing in the post.

The Institute's annual banquet and entertainment, held on April 5, had E. N. McDonnell as toastmaster, who introduced the honored guests.

The next meeting of the Institute will be in July at Portsmouth, N. H.

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R. M. Marberry, advertising manager, The Timken-Detroit Axle Co., has been appointed merchandising manager, Timken Silent Automatic Div., and as such will direct the sales activities for the Division's complete line of heating equipment and supervise all advertising and sales promotion programs. He joined Timken in 1934 as editor of *Timken Heat,* house magazine, became sales promotion manager of Timken Silent Automatic in 1939 and in 1940, was designated advertising manager of this division and the parent company.

Show emphasizes Refinements

Still greater Importance attached to clean Combustion, low oil Bills

by

J. W. Schulz

APRIL 2 TO 6 were days exciting enough for those men of the oilheating industry who came to Chicago to visit the 19th National Oil Heat Exposition. Many of the exhibit booths had oilheating equipment fascinating to technical-minded visitors. True, a few additional nationally-known manufacturers could have been at the show with their burners, furnaces, and boilers. For certain reasons, they weren't there. Some, conspicuous through absence, were much inquired about and greatly missed. However, the exhibits at the show provided more than enough technical advancements for this year. They proved that oilheating is far from static with respect to equipment inventions, development and refinements.

The show proved that efforts are being made to arrive at exceptionally clean combustion from flames adjusted for the minimum excess air that means low oil consumption. That's a development trend for oilburners and specialties for oilburners.

Furnaces and boilers continue to be refined for easy adaptability to newest type homes and heating system arrangements. Down-flow models for perimeter heating, for example, are on the minds of oil furnace manufacturers. Oil boiler manufacturers try to provide models that fit radiant heating and baseboard heating, and that give satisfactory tankless hot water though fired at 1.0 gph or less.

Easy, low-cost installation, tune-up, and servicing is stressed by almost every equipment manufacturer.

The marvel is that the work of developing and refining electrical controls always goes ahead at top speed. Controls have been excellent for years, at least according to technically-able burner dealers who've made a big point of using the best controls. Yet controls have gotten better and better, year by year. In the exhibits at Chicago were new and improved control panels for domestic, commercial, and industrial burners. There were improved room thermostats, new controls for furnace-type winter air-conditioners, whole new control systems for forced circulation hot water heating plants, and special control devices made to improve the starting and stopping of pressure burners.

The following notes and comments, which are aimed to deal only in terms of products which were brand-new at the Chicago show or which are relatively new and never have been mentioned before in a FUELOIL & OIL HEAT show report, were prepared in Chicago during the show. Because of the hectic, feverish show activity that this time had even more than its usual effect on our note-gathering, it's possible that we missed up on getting notes on an important new product or two. Any such slip-up is unintentional and accidental.

General Electric featured a complete line of domestic oilburner controls for the first time, at the Chicago show. The line includes a stack control panel for constant or intermittent ignition, a room thermostat with optional night set-back feature, and a complete line of limit controls for all types of heating plants. These G.E. oilburner controls feature simplicity, dependability, and the well-known General Electric name. In the same display booth were electronic controls for big burners, ignition transformers, and motors for oilheating equipment.

In a nearby booth, to the delight of the many oil-minded power plant specialists who have used Armstrong traps for years and years, Armstrong Machine Works made its first appearance at an oilheating show. In this booth were, of course, the very well-known Armstrong traps and the Armstrong catalogue and instruction book that amounts to a handbook on steam traps. But the big point of the Armstrong display was that this company is extending its activities into the field of domestic heating. It's come out with a control system for forced circulation hot water heating systems. The Armstrong unique room thermostat, used in this control system, has a synchronous Hayden electric motor that turns a cam shaft once a minute. This thermostat is used with a three-way bypass valve, made by Armstrong in a 2" size, which features fast opening and closing; it opens wide in less than 10 seconds. The end result is that the system bleeds spurts of hot boiler water into the radiation system while water is being circulated through the radiators continuously. This gives extremely even, smooth heating together with uniform temperatures for all the radiators in the system.

If any man who loves pressure burners missed the Minneapolis-Honeywell booth at the Chicago show, we feel sorry for him. The new Honeywell delayed-open oil valve was featured in this booth, and for many pressure burner specialists this valve was the big thing of the Chicago show. The Honeywell story is that putting this valve on a typical pressure burner cuts out many

a dealer's no-profit service calls by providing a clean start and a clean stop every time. Inexpensive and quick to install on any pressure burner, this delayed-opening oil valve is something that any dealer and any curious service man can try out easily for himself.

The new Bell & Gossett "comfort control system" was of prime interest to hundreds of boiler-radiator enthusiasts. Said to be a revolutionary advance in outdoor-type temperature controls, it's intended for all types of forced hot water jobs. It boasts especially accurate compensation for both wind and outdoor temperature. The unique control device, entirely different from anything you've ever seen, extends through an outside wall of the building, and its indoor end actually is heated by hot water circulated to it from the heating system. Some of this heat is conducted through the control to the outdoor end, dissipated there in accordance with the outside temperature and wind velocity. A hermetically sealed switch in the outdoor part of the control opens and closes the unique automatic valve that substitutes for an ordinary flow control valve. The circulator runs continuously when heat is needed. The system has a bypass around the boiler. There's much more to this story, and a dealer should learn about how a room thermostat can be used with this system (although a thermostat is not needed for large buildings) to stop the circulator if the building temperature is raised by heat from things other than the heating system.

Penn Electric Switch Company announced the Type 443 control, a dual version of its fast, liquid-fill control. Made for hot water jobs, it provides the high limit control and reverse-acting control in a single unit; adjustable differential throughout.

Taco announced that its Taco-Matic valve, which should be known to all lovers of hot water heating, now has a new, added feature. It comes doubled tapped for easy use of the boiler "dip tube" idea. If you are boiler-radiator minded and don't understand this, you should. Ask Taco.

Perfex pointed to its Prima-Ray control, as the big, new thing in its extensive display. The cartridge type flame detector mounts on the nozzle adapter of a gun burner, looks like an electronic type although it is not an electronic type, and is reported equal in speed to an electronic type. It is heat-responsive, not light-responsive.

American Clay Forming Company had its booth full of fireboxes made of insulating firebrick material fired at 2490°F. It offers standard models for conversion jobs; including round and square fireboxes, and fireboxes of adjustable-shape book-tile. This company specializes in making light-weight refractory fireboxes to specification for boiler and furnace manufacturers.

Fitzgibbons showed a new boiler jacket of "Asbestosite," said to have the rigidity and good looks of steel, and to insulate.

Torrington Manufacturing Company pleased those dealers and manufacturers' men who find boilers and furnaces stay cleaner when the blower's the coasting type, by bringing out a new coasting-hub blower wheel described as designed for a million starts and stops. Torrington says it's made extensive field and laboratory tests which prove the coasting hub provides the final answer to the problem of obtaining out-of-this-world clean burning from a gun burner . . . it's smoke tendency on stopping that counts, not smoke tendency on starting.

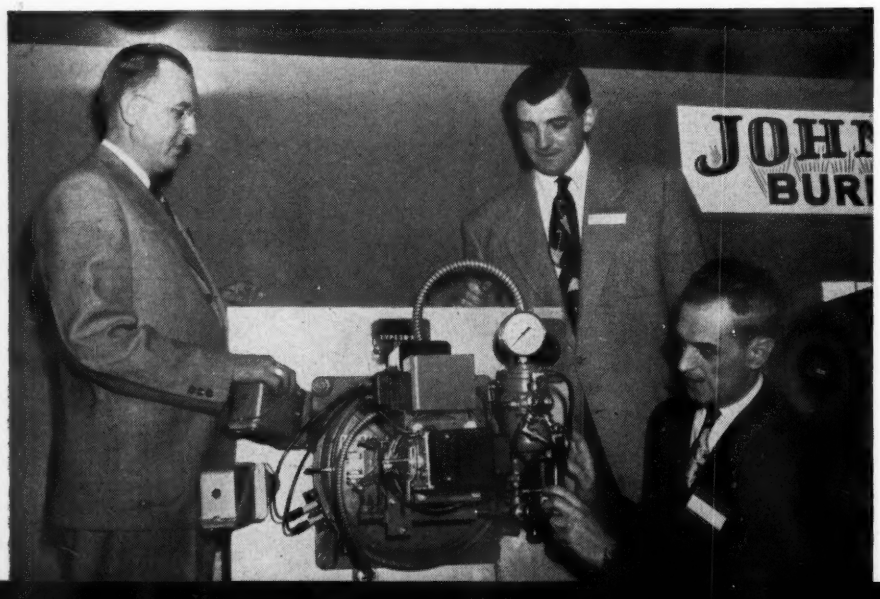
White-Rodgers was enthusiastic at the Chicago show over new ruggedness in its Models 610 and 611 burner panels; see p. 45 of the February issue of FUELOIL & OIL HEAT.

Eddington Metal Specialty Company showed its new oil filter for domestic burners; model S-254; wool filtering element, throw-away type, 25 gph capacity, 1/4" or 3/8" IPT, and easily serviced because one bolt holds it together. It makes even more complete the outstanding line of Eddington nozzles, filters, strainers, flame mirrors, and servicing kits.

McDonnell & Miller had high pressure ASME rated relief valves at the show as new products, for up to 150 lbs. pressure. The #33 relief valve is ASME rated and serves for up to 30 lbs. pressure.

Webster Electric Company made the big point that "Delayed oil start is an OLD story at Webster Electric," coyly pointing out to Charley-come-lately's that it's been fathering the idea since 1938, has always thought the principle was just dandy, and what's more believes in building the feature right into the fuel unit. Like it's been doing right along. The Webster way to get the delay: Relieve pressure in the nozzle line instantaneously from the nozzle all the way back to the bypass circuit. Advantage: No extra pieces to add to a burner, and no "trapped pressures" on stopping. All this comes straight from Webster, as its sales story since 1938, of course. That year, it used a warp switch to obtain any desired oil delay. Having a bimetal strip, heater element, and contacts, this warp switch was connected to an unloading solenoid valve. Webster went electronic in 1940, using a rectifying tube and delaying by waiting for the filament to heat. The name "Delaytrol" first was used in 1940. The new Delaytrol, the new Webster fuel unit featured at the show, gives a normal oil delay of 7 seconds, which is best according to thorough recent Webster research work.

Rochester Manufacturing Company



featured its new dial type thermometers with the dial reset device. Made in 2", 3", and 6" dial sizes and for up to 1000°F., these can be restored easily to overall scale accuracy, should rough treatment or dropping jar them out of calibration. It's a valuable feature for a dial thermometer to have!

Sundstrand Machine Tool Company had this news. Its solenoid feature is available on all its fuel units, both single and two-stage models. When the coil is not energized, oil from the pressure side of the gear set is bypassed to the strainer chamber (one line jobs), or to the return line (two line jobs). Wired in parallel with the burner motor, the coil gives the snappy cut-off which Sundstrand finds is the big thing needed to obtain better, cleaner combustion from pressure burners.

Delavan Manufacturing Company's Chicago show exhibit had a new feature, highly educational. This was a giant-size pressure atomizing nozzle made entirely of Lucite, actually four times oversize but seemingly about ten times oversize, with all parts made to scale including the atomizing slots and orifice. Water sprayed from it continuously, and the air vortex (Sparky said it was a chunk of air held rigidly in the middle of the orifice by nothing) could be seen most clearly, giving a better idea of nozzle performance than comes of reading hundreds of pages on the subject. The air vortex clearly extended to the back of the swirl chamber. The set-up proved liquid comes through the orifice in the form of a hollow tube, then flares into a spray.

Tuthill Pump Company advanced a new arrangement by educating show visitors on how to rig together a Tuthill Fuelstat fuel unit and a Skinner solenoid valve. Also, Tuthill introduced at the show its new auxiliary motor-driven pump unit for heavy oil jobs. Termed Model CG-SU-10, this is made in six sizes for from 30 to 1,000 gph. Here's something new! This pump set is belt-driven but uses a flexible coupling, being nicely designed to give the pump no side pull from the V-belt drive. Should be extremely interesting to dealers handling horizontal rotary cup burners and other types of commercial and industrial oilburners!

Heil Company had a new line of steam and hot water oil boilers, vertical steel tubeless type, with oilburner enclosed. The RB-1 is rated 1.0 gph; the RB-2 at 1.2 gph.

Heil is using a filter gage on its furnaces. Showing precisely when air filters need attention because of plugging, according to Heil's field check-ups this filter gage is obtaining great dealer acceptance. Nice feature!

The Model VCF-120 "Portable Heater" was the big new product in the booths of Harvey-Whipple, Inc., which as usual were filled with an exceptionally complete line of high-quality oilheating equipment. Fired 1.20 gph by a Master Kraft pressure burner, this unit creates its own draft, has a built-in self-cleaning induced draft blower. Use of a smokepipe is, however, optional. Rolled around on its big pneumatic tires to provide temporary heat, under some conditions the unit can flow its products of combustion into the space being heated. Entirely self-contained and ready to use anywhere, the Master Kraft Model VCF-120 has a built-in 14-gallon fuel tank. Extremely flexible in what it can do, this portable heat machine should have literally hundreds of applications.

The booths full of General Electric oil-fired furnaces and boilers had a new product, the "Automatic Air-Wall Register" which provides individual room temperature control or zone control. A residential summer-winter air-conditioning plant was on display.

Century Engineering Corp., providing low-cost home units that can be switched over to burn either gas or oil, brought out its new Model RFG-85 furnace for .85, and its Model RFG-105 furnace for 1.0 gph. These steel furnaces are for gravity circulation warm-air heating plants, thus may give equipment dealers a few ideas on how to provide lowest-cost oil heating systems! Century may have something!

Anchor Division, Stratton & Terstegge Co., announced Model AW2-RV "Reverse Flow Furnace." Made especially for perimeter heating, it is now available with a .6 gph vaporizing burner, will be available soon fired by gas or by a pressure type oilburner. Rossoe Manufacturing Company said it had something new under the sun in its Rossoe Economatic floor furnace fired by a pressure oilburner powered, mind you, by a 1/12 hp motor.

H. C. Little Burner Co. came out with a new wall furnace. Fired .6 gph, this features a radiant front panel, air circulation front and back to heat two rooms, and smokepipe connection arranged to the flue can take off either side of the furnace or go straight up in the wall using a patented flue.

Timken Silent Automatic has had a line of equipment that's been about 110% complete with respect to meeting the problems of heating the smallest, best-insulated homes, yet at the show Timken announced still another small oil boiler, the Model OBR-80. A steel boiler boasting of a well-behaved tankless water heater, of course, this is of course fired by a wall flame burner . . . at .8 gph. Quality TSA equipment throughout, it obtains low stack temperature and high efficiency through

coupling of the wall-blanketing wall-flame to an exclusive Timken design of the direct heating surfaces and flues. Many, many visitors showed a love for that awfully well known line of Timken wall flame equipment!

Gilbert and Barker exhibit men, though mostly proud of the Gilbarco suspended furnace units on display, chuckled a good deal as they played up their "Economy Clutch." They said other companies find difficulty in obtaining the perfect starts and stops from a pressure burner which this built-in device gives Gilbarco burners. Besides, aren't some other companies a bit late, they reasoned, in arriving at appreciation for the perfect start and stop advantage which Gilbarco's had for some years now?

York-Shipley, Inc. introduced at the show its "Great White Line" of oil-fired units, which is so out-of-this-world complete that there's not space here to even list the models and their major features. Those interested simply have to obtain their York-Heat data from York-Shipley. No dealer who requests full information on this high-quality line will be disappointed!

At the show were two brand-new York-Heat products, suspended furnace units for 1.09 and 1.42 gph. The stack temperatures of these are held down through use of an effective air baffle arrangement, ingeniously used to increase heat transfer rates of the indirect heating surfaces, located between these surfaces and the outer shells.

Radiant Utilities Corp. declared it had in its booth the biggest pressure burner on display at the Chicago show, a 25 gph model. How about that? The standard line of Radiant pressure burners includes five models for .5 to 25 gph. Then there are the Shell head models, including the big one for up to 10 gph which Radiant declares is the burner needed by the many dealers who love Shell heads, but who up to now haven't had the pleasure of a BIG burner with a Shell head. The new Radiant burner for front mounting on furnace and boiler units has an adjustable flange; one model easily fits on many kinds of units.

Swirling Flame (changed from Swirling Heat) appeared at the Chicago show with a new small model of

its distinctive vertical-head pressure burner. Three sizes now give gph range from .5 to 7. New features: blast tubes of different lengths now are available, facilitating installation work on bigger jobs and jobs having pipeless and gravity circulation warm air furnaces; also, there's a new flange to mount these burners on high boy units. The simplified installation and easily-serviced features of these Swirling Flame burners are excellent; also the feature that permits a service man to straighten a lop-sided flame with a burner in operation.

Sun-Ray burners, with slight changes in the blower housing design to satisfy the manufacturer's perfectionistic tendencies, are made in three sizes for .7 to 25 gph. Three models have Shell heads.

Standard Heating Equipment Co. showed the Hacker furnace unit, rated .75 to 1.00 gph, in the same booth which had the Acme pressure burner (the Cedar Rapids, Ia. Acme).

Burnham Corporation announced the new Burnham Pacemaker oil heating unit, wet base series for .90 gph in one size and 1.35 in a second size. A cast-iron vertical sectional boiler, it's compact; only 34" high and 21" wide, and either 34" or 41½" long. It's made for steam or hot water, is shipped assembled. The Burnham pressure burners is inside the jacket.

Chrysler Airtemp displayed a brand-new line of oil boilers, vertical steel design with 2" firetubes fitted with spinners for low stack temperature. Six sizes provide capacity from .8 to 3.5 gph. All are available with round jackets or rectangular jackets that enclose the burners. A genuine year-round central air-conditioning plant in the Airtemp exhibit had a 3 hp freon unit and a 1.35 gph winter conditioning furnace.

S. T. Johnson announced the 65-U Aerolux, .75 gph furnace Hi-Boy unit designed especially for government projects, defense housing, etc. S. T. Johnson has shipped 600 of these to Okinawa.

S. T. Johnson also announced gun type burners, combination oil and gas type, for manual or automatic switching of fuels; seven sizes for from .75 to 18 gph.

Iron Fireman drew crowds of big burner enthusiasts with its highly developed horizontal rotary cup burners, and announced the HB-80 winter air-conditioning furnace, High-Boy fired at .80 gph.

Ace Engineering Company came out with an improvement at the show. The straight-line modulating Ace Uniflow valve, which compensates for viscosity changes caused by temperature changes and the delivery of different types of heavy fueloils, now is standard on all burners which use hot oil.

Ace Engineering, in addition, showed a new linkage used to set air-oil ratios for different gph rates. This relates to the service problem of adjusting for proper CO_2 throughout the burning range of a burner that automatically gives different fire sizes. The new linkage is exceptionally clean-cut, rigid, and shipshape. Setting it is simple. First the service man sets the high fire (oil rate and primary air rate and secondary air rate). Then, because of the new design, he is able to set the low fire without disturbing the high-fire adjustments he's made. Service men will love Ace Engineering for developing the new air-oil linkage! There are ten sizes of Ace horizontal rotary cup burners, for from 4 to 165 gph. Most models have direct drive or belt drive as optional.

Cleaver-Brooks Co. had new items at the Chicago show, including new combination Hev-E-Oil burners for gas or oil, and sporting finger-switch transfer from one fuel to the other. Automatic transfer is optional. The AMH-7 line fires from 7 to 60 gph, uses electric ignition for gas firing, has Minne-

apolis-Honeywell electronic controls. To burn gas in the regular line of Hev-E-Oil burners, a dealer can remove the drawer oil assembly and substitute a newly developed gas drawer assembly.

Cleaver-Brooks displayed a new product designed to make it easy for pressure burner manufacturers to produce low-pressure gun burners. It's a low-pressure fuel unit arrangement or foundation consisting of a low-pressure air compressor and a positive displacement metering pump, constantly variable in adjustment and good for up to 3 gph. A gravity oil feed model was shown at Chicago; a suction pump model is being developed.

Staffco displayed, in addition to models of its regular complete line of horizontal rotary cup burners, a new combination gas-oil burner. Belt drive, it uses the Minneapolis-Honeywell R178 electronic control. One model fires up to 25 gph, No. 5 oil. Also, No. 6 oil models are available.

Combustion Control Corp., maker of Fireye equipment, created as much excitement at the Chicago show as it did last January at the Heating and Ventilating Exposition in Philadelphia. If you haven't done this before and you're interested in latest electronic devices for oilburners, read p. 45 of the February issue of FUELOIL & OIL HEAT. Or better still, obtain from Combustion Control Corp. the complete story on its new Firetron Tube, which is of vast academic interest. It seemingly is a fact that the Firetron Tube has accomplishments entirely different, in an out-of-this-world way, from any previous electric-eye devices, including those in the Fireye line of the Combustion Control Corp. Many manufacturers of oilburner equipment are doing their best to learn about and test out the new Firetron Tube.

Although certain oilheating equipment manufacturers failed to show at Chicago, the manufacturers who had displays there provided the technical-minded show visitors with far more than one week's quota of new products and new ideas. There was no shortage of creative thinking. The 1951 show at Chicago proved that oilheating refinements and developments are, this year, racing ahead at a pace as rapid as ever has been seen.

"Best Booth" Award goes To Burnham Corporation

THE PLAQUE, awarded by FUELOIL & OIL HEAT for the Best All-Around Exhibit at the Chicago National Oil Heat Exposition, was given to the Burnham Corporation booth, by a committee of three judges, who made their selection on April 3. The award was made largely on the basis of overall appearance and the feeling that the booth told a clear story quickly and was so laid out that visitors to the exhibit could come in, examine the equipment and illuminated pictures and diagrams and move out quickly.

Base-Ray radiant baseboards were featured along the back of the exhibit, with shadow boxes showing heat trans fer from the units and a simulated installation illustrating the appearance of a finished job. On the other end of the exhibit's back wall was shown a combined radiant radiator, cabinet and grille, with another simulated installation showing it as a concealed unit.

Boilers and boiler-units displayed included Yello Jacket and Pacemaker models, with an exposed cut-a-way of the latter tilted slightly upward to facilitate examination of its construction.

The booth was planned and executed by Frank R. Brophy, advertising and sales promotion manager.

The FUELOIL & OIL HEAT annual award is made for beauty, accessibility, educational and sales value at the dealer level. The three judges who picked the winner came from the Chicago Chapter of the National Industrial Advertisers Association. They were: Don Poor, advertising and sales promotion manager for Ceco Steel Products Corp., Chicago and president of the chapter; Stanley J. Fairweather, president, General Exhibits and Displays and R. S. Aitchison, editor, Industrial Marketing magazine, Chicago.

H. N. Jones, *general sales manager, Burnham Corp., is shown receiving the plaque from Lee Steedle, assistant advertising manager,* FUELOIL & OIL HEAT. *Others in the picture are: (l. to r.) E. A. Snyder, manager Pittsburgh branch for Burnham; W. F. Enochs, Chicago sales representative; R. S. Aitchison; Don Poor; Stanley J. Fairweather; Mr. Jones; F. R. Brophy, advertising and sales promotion manager, Burnham; Mr. Steedle and D. W. Stevens, sales manager, Chicago branch, Burnham.*

Joe Keyhole by Remote Control

Who's Who, and You Too, at Chicago's Navy Pier

Dear Fellow Members of the "We Can't Get Enough Copper and Steel, And Where The Hell Wuz You When We Had It" club: We hereby disclaim all responsibility for whatever damages your good name may sustain at the hands of us Pinch-Hit Keyholers. The genuine Joe became a victim of the Medics the day the show opened. Spent the rest of the week staring at his hotel room ceiling. He received 3,168 phone calls, a knee-high pile of notes slipped under the door, and more flowers than a botanical garden. Thanks, he sez, thanks . . . really means it.

DUSK WAS SETTLING over Lake Michigan that fateful Monday evening, when a fish stuck his head out of the drink to find out what the hell them banners wuz doing hanging from Navy Pier. This significant episode marked the beginning of Chapter Number 19 of the Saga of the CeeOhTwos. From all parts of the nation experts on combustion, authorities on atomization, and liars about stack temperatures had congregated to impart the wisdom instilled from experience and imbibe the liquor distilled from whatever.

First man we saw when we arrived at the Pier was Rudolf Ulrich, who knows more about smoke than the firemen. He was smoke-spotting all around the Bacharach booth, assisted by Stein, Smith, and Gardner.

Is old Joe Keyhole just sensitive, or did anyone else notice the gas unit heaters hanging next to the signs "*Better* Heat with Oil Heat"? One of the biggest attractions of the Show was the Metromatic booth. Fred D'Angelo, Bob Pyne, the really lovely Mrs. P., and the whole gang were answering thousands of questions about their Metropac unit. It's the only combination warm-air furnace and built-in hot water tank we've ever run across, and boy, does this thing work! They had a wood-and-canvas man waving a burner at everyone.

Jack Minner, E. J. Frawley and Winston Stelk helped Keyhole bowl an almost perfect 300 at the Shell Booth, then the machine tilted, the score came up minus 10 and we won a can of mineral oil.

Did you see John Landerman? He drives the only Cadillac we've ever seen with a Shell head mounted on the hood.

Sharing prize-winning recognition was the terrific Minneapolis-Honeywell exhibit. This got second place mention for Best Exhibit, for which we drop one orchid (verbally, that is). Hi, Chappie! Frankly, we think that it was the nicest we have ever seen by M-H. That "Delayed-Opening Oil Valve" display! The "Dissatisfaction Campaign" played up in those national consumer papers really hits home. We started to check on the M-H boys attending and it looked like Coxies' Army parading before our watery eyes. But just to mention a few, there were Tom McDonald, H. D. Bissell, Jack Tracy, Art Lockrae, Charlie Cochran, Pete Dorsey, Bill Brown, Herb Williams—how long can this go on? We have to save space to pay tribute to our dear friend, H. E. Chapler. "Chappie" was honored by his colleagues at M-H booth in Minneapolis and during the convention. Loads of loot were piled on him at a testimonial party in Minneapolis. We add our most sincere wishes for the future and say "Thanks, just for being our friend many years." Old Joe Keyhole just felt a cinder blow into his eye. Excuse me just a minute, will you please. That's better.

Swinging down the lane a bit we saw a heluva crowd bunched together and we immediately thought they dragged another body out of Lake Michigan. We thought it was the fabulous Winkler live demonstration, but it turned out to be a mock demonstration of the L-P Burner. (Remember, no live fires around Chicago any more, my friends. Not since O'Leary's cow kicked over the lantern and burned the town down.) It was tough on those wildcats from Lebanon, Indiana. The real fire-ball is Herman Winkler, himself. He can give lessons to Elmer Wheeler and Frank Boettger any day of the week and twice on Sundays. Wow! Another disciple who's really got Winkler religion is that old "smoothie" Walter Blake. And he's so damned good-looking! It's almost unfair trade practice. We saw the very able Mr. Claude A. Potts, Phil Kosch, Norm Gill, Bob Hulse and Joe Witt. I meant to ask, do you people select your personnel on their oratorical ability? This observation was made at the Claypool Hotel and I can't get it out of my noggin.

By-the-way, I got one of the DSM's quiet long enough to show me the new Universal Furnace. Looks good, comes in 21 combinations. That should hold those dealers a while.

That big guy you saw moving around the G. E. Air Conditioning Dept. booth was W. L. Sneltjes, the only man who knew what the tops of their big units looked like (how was the view, Bill?).

That different Swirling Flame burner was back in the limelight again. On hand to argue its merits were Jesse Donella, Art Brammer, Robert Doyle, and its inventor, R. D. Schoenwetter. The sign said "Burns like a vertical gas flame"—careful now boys, that's a dirty word.

Clark Hastings, John Kershaw and Bill Chase of Rochester gladdened old Joe's heart, those guys look good to me even when I'm sober. Bill passed up the Chinese food this year. Ask Kershaw to tell you how he changed hands. Clark was clutching his classy black Homburg hat. Mrs. Hastings wowed 'em in the Black Hawk Restaurant with her bought-in-Boston gown.

Electrol (ah, nostalgia) which hasn't changed in 20 years, and doesn't have to, brought Bob Andler and Lou Schroeder to Chicago. Bob opened up the Show the first day, and then went home, leaving Schroeder to blow up the balloons all week. The fish must be biting back in Jersey these days.

Farther down the line was our old friend from Rockford, Ill. Rufe Gustafson, bossman of the Sundstrand Oilburner. Rufe looks twenty pounds lighter and twenty years younger, which makes him exactly twenty years old. Can my mathematics be right? Rufe brought along his fine assistant, E. M. Smith, who explained that the show model furnace was a Waterman-Waterbury unit which goes so well with the Sundstrand burner. Like razors and blades.

A newcomer to the show was The Hoover Company, Kingston-Conley Division, which stressed the slogan "Service Around the Globe." Make motors for oilburners and fans. Right up on the edge of the aisle they had a cut-a-way of an 1/8 H-P O. B. motor so a guy could see the quality of their workmanship. Essence of simplicity and dignity! In the background were a half dozen sample motors. There to tell the story were C. P. Williams and A. E. Ott.

The busiest little guy in Chicago all week was Ross Stoffer of American Clay Forming Co., Tiffin, Ohio. His booth contained many specially designed combustion chambers which are "100% Kiln-Cured." Stoffer had the toughest time trying to be in two places at the same time, at the Pier and at his suite in the Sheraton Hotel where he entertained all visiting guests, manufacturers and jobbers. However, the fort was always held down at the Pier by assistant Ben Fogelman, and his ceramic engineer, Paul E. Buckles.

Gabe Marin was a welcome sight for these faded eyes. We watched him selling millions of those fine Series "S" Sun-Ray burners—since they save customers 36% he was only talking 64% of the time.

Messrs. Murphy and Carroll of Monarch didn't make the trek this time, but E. B. Frame and J. C. Underwood wowed 'em with their new porous bronze nozzle filter.

The well-known Quiet-Heet burners were displayed in a small neat booth manned by the Sloan boys, S. L. and Eugene.

Very near the FUELOIL & OIL HEAT booth was the Jefferson Electric Co. of Bellwood, Ill., our local O. B. Ignition

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LOOKS GOOD FROM ALL ANGLES...

No matter how you look at it... as a dealer... customer... service man... Silent Glow's INVADER offers you more than any other oil burner REGARDLESS OF PRICE. Dealers with profit-in-mind know INVADER is easier to sell... offering real quality at lower first cost, lower fuel cost, lower service cost. Cost-Conscious Buyers know INVADER is easier to buy ... priced right for thrifty pockets... fully guaranteed by Silent Glow's A-A1 rating. Busy service men know INVADER is easier to service... one-piece, time-saver top and automatic alignment of parts... and Silent Glow's INVADER stays serviced. Take a look at INVADER TODAY ... and see what it offers.

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Those Who Know Choose SILENT GLOW OIL BURNER

Transformer manufacturer. The only name I could catch was C. T. Hartnett. Were all those other guys visitors or members of the organization? Lest I forget, a sincere compliment to the man or men who write your copy. Excellent!

Our next door neighbors were the Tuthill Pump people who showed the Fuelstat and their very latest industrial oilburner pump, the new SU10 Unit. Sparky made the comment, "Here is a motor pump set that should last longer than forever!" To which we replied, "Why not use the belt to hold up your trousers during off periods to capitalize on that extra wear?" The booth was well manned by H. T. Kessler, W. J. Wagner, J. D. Young, J. F. Palla, J. A. Hennessy, and H. C. Grabow.

Did you all get a gander at the Ko-Z-Aire booth? Those Scotch plaid jackets you saw on the men were the "real MacDuff"—the authentic battle colors of the MacDuff Clan. Does that get across the idea of economical operation of the Ko-Z-Aire Winter Air Conditioners? They did a swell job on their exhibit and deserve a big hand. All the hard work was handled by J. J. Hildebidle, Dick Demarest, Lennie White, and the Chicago Rep, George Johnson.

Everyone was happy to see that old gentleman Mr. Oilburner himself, J. C. Johnson. His sizable stretch of floor space was packed with oilheating units in all sizes and styles, and good dealers of the same description.

E. L. Sandberg and Ed Feeley may have had time to sell a few Fram filters in between greeting old friends, but it must have been a struggle.

In the booth next to us, Joe Balter was really working overtime plugging that bright chrome Taco line. J. R. Murphy left early, and E. T. Houlihan was elsewhere, for the most part. How are those Senoritas, Murph?

Larry "Mirror-Finish" Knapp wandered over with his pockets full of Steinen nozzles.

Digging deeper and deeper for good ideas for dramatic presentation, the boys at Delavan hit upon a good one. A Lucite scale model of the Delavan nozzle with slots and orifice plainly visible. The swirl chamber and orifice action could be plainly seen with the use of a greenish colored liquid which the nozzle sprayed. If that doesn't make sense, blame Gene Olson on account of he's the guy what put them words into my mouth.

That bright young fellow, Dave Morgenthaler was there and Nelson B. Delavan, along with Old High-Kick Champ, McNally. (Believe it or not, Mac can kick to the top of a full length door. Seen it with my own eyes.)

Us kids enjoyed the Gulf Solar Heat Package—a fun house with flashing blue lights, weird sounds, and desolate darkness. Ol' Joe staggered through into the arms of his old pals Andy Stapf, Charlie Kramb, Bud Devlin and Art Harris.

Another Chicago manufacturer with space at the show was the Breuer Electric Company, very sharp looking furnace and boiler vacuum cleaners. Did a lot with the booth, too, with attractive shades of maroon, blue and cream colored background. Still more colorful was the very distinguished Colonel Philip Garrigan Murphy, Louisville, Kaintuckah. A real, honest-to-goodness Mint Julep drinking, Kentucky Colonel. He is the Tornado Vacuum Cleaner Rep doawn thar, and also a charter member of the Pendennis Club in Louisville. Nice ta meetcha, Cuhnull. Also attending were A. A. Breuer, Alfred Anderson, and E. Frahm.

Ray Whipple and Ted Hodgdon were aiming the heat where you want with their latest idea—125M Btu's on rubber wheels, a retractable landing gear. A passerby asked "When does the man come out?" We almost lost our pants explaining the FUELOIL & OIL HEAT belt hanger to Bob Michel and Paul Tolson. We've lined them up as our Southern Distributors.

Harold Wilkinson of Herco, the new OHI "Veep" stopped by, and Rohrer was with him. The Schulkyl Haven delegation was there in force with Joe Eubanks, Lionel Jacobs, and the Lovely Mrs. J.

Cyrus Gates and B. G. Robertson did a bang-up job of low-pressure selling on their new Watts pressure relief valves.

That spry young chap from Minneapolis, C. H. Chalmers came down to give Fred Ravensbeck a hand with the Staffco booth.

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CENTURY'S
44 UNITS
Can make money for you every day!
★ The dealer who sells from a complete line of Automatic Gas / Oil Heating Equipment closes more sales . . . . makes more money!
★ Write today! Some choice territories are open — let us tell you how you can build greater profits with an exclusive CENTURY franchise.
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CEDAR RAPIDS, IOWA
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The Finest in Automatic Heating Equipment

JEFFERSON QUALITY HAS WITHSTOOD THE TEST OF TIME!

The high standard of Jefferson Transformers has become well known to those experienced men who select transformers on *time tested performance records.*

These astute men know that long trouble-free service, superior performance and operating economy are the direct results of advanced design, highest quality materials and ultra modern manufacturing methods and facilities.

Jefferson "Quality with Quantity" production assures them today, as it has for over a quarter of a century, of greater transformer value per dollar invested.

The name "Jefferson" on oil burner ignition transformers is your guarantee of superior quality and performance that has withstood the uncompromising Test of Time.

JEFFERSON ELECTRIC COMPANY, Bellwood, Illinois

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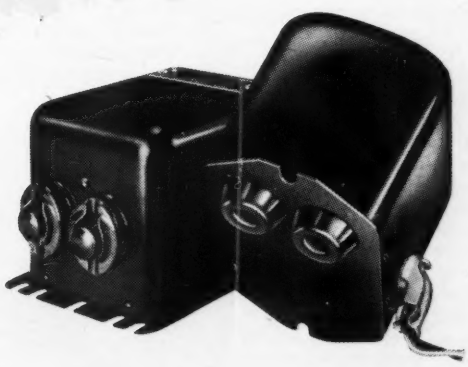
JEFFERSON ELECTRIC

Jefferson Transformers



Fred showed his latest achievement, a complete packaged combination gas-oil, self-contained industrial burner unit with all electronic controls completely wired. If these big burner boys keep simplifying those units, my five-year-old niece will be able to install them. Good work!

We were surprised and pleased to see Standard Heating Equipment Co. from Waterloo, Iowa attending and sharing a booth with friends Acme Burner Co., Cedar Rapids. They had a swell looking Hacker Furnace with an Acme burner attached on display. A neat "package," the two companies and the combination of their equipment. The booth was manned by R. T. Suess of the Bishop Htg. & Supply Co., Highland Park, Ill. and G. R. Riley of Acme, Cedar Rapids.

Understand that Gigli came in from Brooklyn. A guy never leaves Brooklyn they say, unless it is to come to Chicago. I wonder what they mean?

F. R. Donahue, the Burnham engineer, was hollering that a firebox was left out of one of their boilers, and complaining of the general disarray, when the committee of judges walked up and announced that they'd just won the FUELOIL & OIL HEAT Best Exhibit award. H. N. Jones, and Frank Brophy smiled for the birdie as the plaque was presented, and Virgil Good was beaming. This beautiful booth was Brophy's baby, for the most part. Nice going, Frank! Where was Scotty Elder, the Branford ball-of-fire? First time in our musty recollection that Scotty has passed up a show.

About a mile from the entrance at the "half turn," which must be pretty close to Benton Harbor, Mich., we discovered the G. E. Apparatus Dept. manned by Frank Ondrovik, of the Transformer Div., C. J. Monroe, Motor Div., and L. R. Brickey, Control Div. along with a whole gang of other guys, C. J. Ossenfort, B. S. Day, L. R. Spicer, B. A. Feldman, and many others. We hung around long enough to observe the interest shown in their model television set which demonstrated the G-E two-way, self-shielding oilburner ignition transformers. They very neatly got across the idea of how G-E transformers cut down TV frequency energy which tends to interfere with reception. Combined with the transformer display were the G-E oilburner controls, domestic and commercial. Mr. Brickey, down from Schenectady, N. Y. to extoll the wonderful advantages of G-E control equipment, did a real job. I felt a little sorry for these poor guys because they must have worked up some terrific appetites walking the mile long length of Navy Pier to get back and forth from their booth. But they looked quite healthy from the exercise, come to think of it.

We always have to tip the Keyhole hat to the Gilbarco display. Lights were flashing all over the globe at their booth, and Harry Lanyon, Ray White, Harold Ricker, J. A. MacDonnell, and E. A. Sunberg were flashing big smiles all week. Things must be rosy for the boys from West Springfield.

Bob Birkins, Mr. HomEase himself, has plenty of stories. He tells about the old-time bucket-safety that kept going off mysteriously. It developed that a puppy in the basement was mistaking it for a fireplug.

Somebody tried to tell me that the gold plated Booster Pump in the Bell & Gossett booth wasn't gold plated at all. Anyway, it sure made an attractive display as the 1,000,000th B & G booster pump. It was set up on a plexiglas pedestal and revolved under three brilliant spot lights. A gorgeous, black velvet drape provided the background. This was only part of the usually fine display of Bell & Gossett units. Caught a glimpse of Ed Moore and Ralph Patterson but they both move too fast to catch. Wanted to ask Moore about all the publicity we've been reading concerning Dr. X. and a certain discovery which has the whole world excited beginning with the letter "K." Sure hope it's a good lead.

Dick Bardach and Jim Cowan of Ace Engineering showed a new linkage on the Uniflow units that hitches together oil-air rates. It's so simple that even Sparky couldn't get confused. Now that's real progress!

Caught Herb Forgash escorting his very beautiful and charming young wife around the show and banquet hall. Also his plant supervisor, H. J. Prueter, doing likewise. Both are the wheels of Guardian Products.

John Dieselman was making the world safer for oilheating with the Firomatic safety valves at Morse-Smith-Morse's stall. E. D. Hidy came by wearing a Degree Day Recorder in his lapel. The big Bell Pump man, Lou Giannetino, helped us bring back fond memories.

The Clam Chowder Chef from Dowagiac, Mich., Barney Peterson and his brother C. L. appeared on the scene several times. Barney always has his good eye out for something new in the line of accessories, in case anyone is interested.

Charley Molloy and his side-kick, Norm Malcher dropped in to give the joint the once over. Charley makes those "big bag" furnace vacuum cleaners right here in Chicago. He claims they give you "Billboard and Sound Truck Advertising." I'll buy that.

We saw Dan Bierman taking three-dimensional Kodachromes all over the pier, his hobby is making Petrometers when he can find the time.

Mr. "Whirlwind" Stamm of Kresno-Stamm whizzed by, hitched to the Brightest Star of Them All. Lou Milos, the Glider fueloil additive alchemist, has been in this business so long he says he can't remember how it all happened. Shake, pal!

The slogan "It's Magic, It lights Itself!" was echoed by Ken Swift and Gid Porter at the H. C. Little spot. The real maestro of the art of oil burning was in for this session—Ed Bailey of National Aeroil.

I hope I wasn't conspicuous walking past the Dole Valve booth fifty times a day. The two reasons were obvious. Oh how I love those Patricia Stevens models. Did you notice that Miss Millicent Burke (What a racket. He even gets their names, yet.) had eyes that matched the turquoise blue of the trim on her lovely gown? (You dog, you!) Oh, yes—about the booth. Well, that was pretty, too. If you are still interested, the other gal's name was Helen Roberts. Who in the hell were the men at the booth? S. G. Phillips, H. Aronson, W. Pennington and Stuart Singers were the poor guys who had to wrestle with their consciences all week long. And that Colter guy! Francis Lund had torn himself away from shows and Dole show girls. He was in Florida.

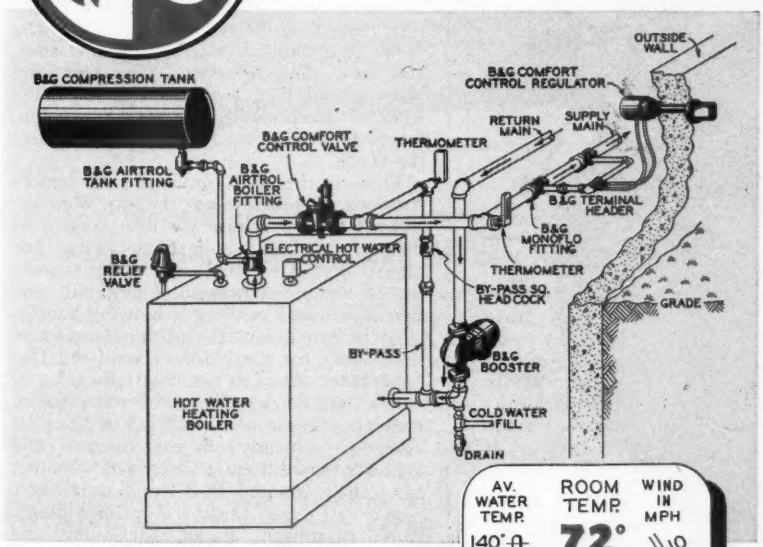
Toridheet members at the show consisted of a lot of local talent including John Hand, Richard Ecklund, John Esposito, and Donald Kroger, all from Chicago. Of course, the handsome triumvirate, Smith, Lucas and Dienst were present along with a couple of other gentlemen from Cleveland. Dienst has no idea how much he helped in getting Old Joe Keyhole operating this year. Undying gratitude to you, sir! Let's keep it a secret. In partial repayment we shall mention that Toridheet rotary wall flame burners, Toridheet furnaces and boilers with their beautiful traditionally green Hammerloid finish are tops in the heating industry. So there, I said it and I'm glad.

Images we'll remember: Dick Bohn hugging that oversize microphone "The damn thing doesn't work!" His pitching arm has improved considerably, too. Our advertising staff doesn't know it, but Hoffman Beagle and Ralph Delancey are still turning out burners at a rapid clip back in Meriden. Nowhere in the country have

Comfort Control Valve
Comfort Control Regulator
NOTHING LIKE IT ON THE MARKET!
An outdoor-type temperature control providing compensation for WIND EFFECT

COMFORT CONTROL SYSTEM

...ONLY ONE ADJUSTMENT REQUIRED



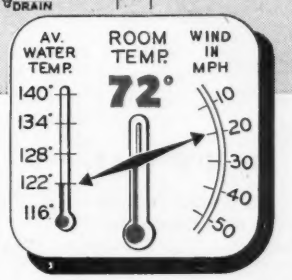


Diagram above is a typical installation of a B & G Comfort Control System, showing piping details and position of Regulator and Control Valve. Lower diagram illustrates how water temperature is varied to meet changing wind and weather conditions.

Utterly different—completely successful in maintaining uniform, comfortable temperatures in buildings heated with forced hot water, using radiant panels, radiators, convectors or baseboards. This outdoor-type control is entirely mechanical in operation—no bellows, capillary tubes or fragile electronic equipment.

The B & G Comfort Control System not only detects changes in outdoor temperature and regulates the heat supply to maintain a uniform indoor temperature, *but also provides compensation for changing wind conditions!*

An exclusive feature is the unique arrangement whereby a small amount of heat is conducted from the heating circuit through the Comfort Control Regulator to the outdoors where it is dissipated at a rate dependent upon temperature and wind velocity. This is the feature which makes the Comfort Control System truly wind-compensating.

After installing, the B & G Comfort Control System requires only one adjustment—easily made by turning a single dial.

Send for descriptive literature

All the facts on the B & G Comfort Control System are given in this bulletin, including charts showing results of temperature control with and without wind compensation.

BELL & GOSSETT *Company*

Dept. BZ-7, Morton Grove, Illinois

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1400 O'Connor Road, Toronto, Canada

Keyhole's orbs rested on a more beautiful jobber display room than in Malden, Mass., but Everett Kimball tore himself away from those plush surroundings long enough to visit with us a few days.

C. B. Wilson of Klemm filters provided an oasis and rest haven for all visitors. With the help of Gerry Wieland and Bob Smiley, he made a lot of weary people happy. Sure would like to have Wilson's knack of telling a good story, or even a bad one, for that matter. Something tells me he's had professional experience. Al Greulich of Detroit was there for a while, too. When you think of Greulich you think of Skuttle—humidifiers and draft controls, naturally.

Jack Carmichael and Sandy Dann made the joint more pleasant at the Turb-O-Tube Furnace booth, there's a young organization that's going places!

A giant Ray oilburner stood in the middle of the Frisco men's booth. So halp us, we never saw a more beautiful job on any oilburner; those Ray jobs are good from the inside out.

All the gang from White-Rodgers did a bang up job during the week getting across the story about their Primary Control. It's a good one to listen to in any place but Paris in Chicago. Right, Mr. Robinson? Jack Searls, Joe Newman and Boss-Man Rodgers helped out at the booth with a flock of other boys from St. Louis.

Another newcomer to the Oil Heat Show was Armstrong Machine Works of Three Rivers, Mich. Armstrong, Settle and Ulrich "trapped" more than visitors in their well stocked booth. And another item besides their regular line of steam traps is a "smooth-as-silk" heat control system for hot water systems. It's brand new.

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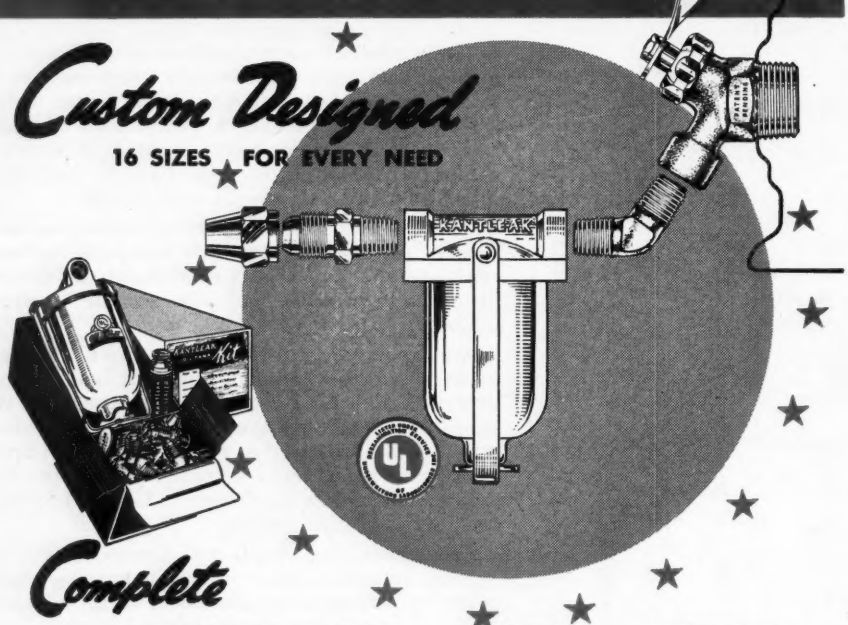
• LOWER INVENTORY
with the 'One Package'...
KANTLEAK
OIL TANK KIT

Custom Designed
16 SIZES FOR EVERY NEED



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★ SIMPLE TO INSTALL ★ COMPACT ★ LOW COST

A trouble-free installation Kit that will balance your stocks, reduce slow moving parts in your bins and cut sales time to a minimum. Dealers already supplied report no sales resistance... The Kantleak 'one package' Kit meets with instant approval. Filter approved by Underwriters' Laboratories for No. 1, 2 and 3 fuel oil.

— SEE YOUR LOCAL JOBBER OR WRITE DIRECT —

ABC
KANTLEAK PRODUCTS
ANDERSON BRASS CO.
5305 TWELFTH STREET · DETROIT 8, MICHIGAN

The steel shortages haven't fazed Paul Addams and John Collette. They're making those good Fitzgibbons boilers with Asbestosite jackets these days. Gale Shedd and Fielding didn't make this trip, but the other Fulflo filter boys were on their toes and giving us maximum filtration efficiency at minimum cost.

Jack Goldberg, Brooklyn's millionaire mayor and his two aldermen Arthur Marcus and Joseph Bloom, showed us their Radiant burners with Shell heads up to 10 gph.

H. T. Kucera the Weather-Man held down his booth almost single-handed all week, where's Dobbie? Those Lite-Cast heavyweights, Eisentrager and Neu were in from Philadelphia.

The Kewanee Boiler Corporation had good representation in E. M. Palmer, Grover Zang, Paul Mutchler and Earl Thompson from Kewanee, Ill., and a whole raft of fellows from the Chicago Branch including Ralph J. Sjoberg, Carlton F. Olson, Robert E. Wicklander, E. W. Irwin, J. W. Carr and last but not least that adorable new office secretary, Miss Lou Ann Noard. Keith Ferguson came up early in the week to set up the display and then volunteered to stay over a few days to help man the booth.

One of the most unusual live demonstrations at the show was the one Webster-Electric used to show the new version of delayed start with a magnetic valve employed in the 5T fuel unit. Instantaneous cut-off was demonstrated. Found out that Ben Wiechers was the guy blowing bubbles all week long behind the curtain. Come now Ben, that's for the kiddies. Good old Doc Ford came down to give the lads a lot of moral support. Loyalty is the name for it.

Got a glimpse of Bill Magill of Chrysler Airtemp showing off his summer and winter air-conditioning unit. Harry Young, M. J. Leonard and Phil Knoff were there plus a half dozen District Reps, Schiffman, King, Mansbach, Parke, McCauley and Johnson.

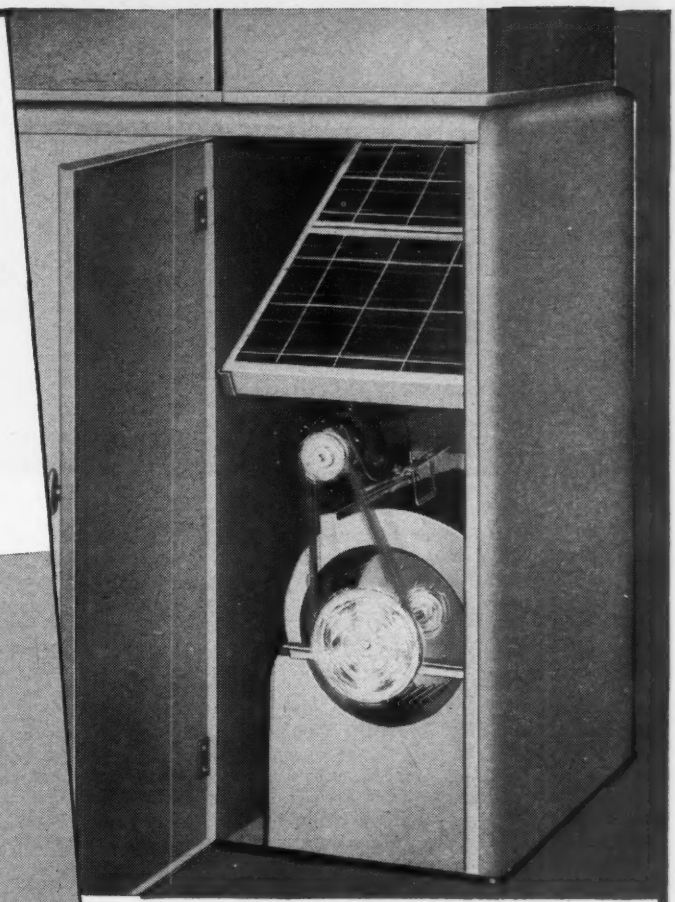
F. C. Russell, Prexy of the R. C. S. Tool Sales was right on the job with one of the most dynamic demonstrations ever presented anywhere. He and his crew, including T. M. Sweeney, D. D. Davis, C. R. Longanecker, G. E. Schultz and R. L. Stephenson, helped saw wood, nails, sheet-metal and everything but the I-beams that held up the roof. Splendid booth, fellas. Good work!

Iron Fireman boys did it again, and we know who's responsible. Like at Philadelphia last year, they garnered the "post position" at the Pier. Everybody tripped, fell, or stumbled into the waiting arms of Cy Burg, Dale Wylie, Jones, Webb, or Evans. Joe Keyhole's congrats to Bill O'Neil, new-

End Motor Failures Due to DUST

Get the Facts on EMERSON-ELECTRIC'S New Dustproof Centrifugal Starting Switch

PATENT APPLIED FOR



The furnace blower is but one of many motorized applications where dust or other solid particles, in the atmosphere, create an operational hazard to motor life.

Your blowers, appliances or power tools will have a competitive advantage, with this new feature.

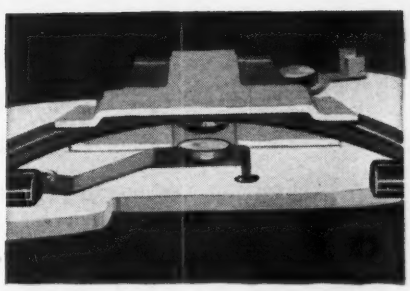
This is important *news* for every user of general-purpose split-phase or capacitor-start ventilated motors! Emerson-Electric's uniquely shielded starting switch was originally designed for power saws—which operate under the most difficult conditions. In addition to the excellent results reported on saw motors in daily service, tests have been conducted even to the extreme of pouring saw dust into the ventilated openings, while the motor is operating, without hindering the switch action.

This improved switch involves no change in external motor dimensions, internal design (other than parts shown), or motor performance . . . it is readily adaptable to any Emerson-Electric general-purpose motor employing a cutout switch. It will eliminate motor failures caused by dust, dirt or lint on switch contact points.

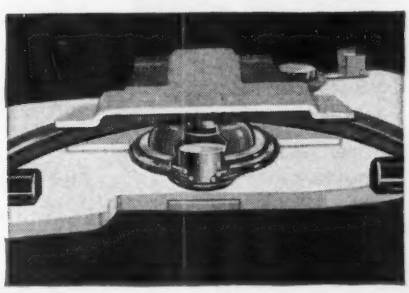
For complete information, write for Motor Data Bulletin No. 124.

THE EMERSON ELECTRIC MFG. CO.

St. Louis 21, Mo.



Before:
Standard-type starting switch, mounted on inside of motor end shield, has exposed contact points. Dust entering through end-shield vents may lodge on points and prevent contact . . . a possible cause of motor failure.



After:
Vital contact points are completely shielded. Insulating and metal washers are held firmly against the lower rim of the shield by a spring arrangement. This view shows shield, washers and spring cut away to show how they protect contact points.

EMERSON ELECTRIC
MOTORS • FANS — APPLIANCES

fuelOil & oilheat

elected Chairman of the Board! Has he other talents? Else how did his table at the banquet get loaded with those lovely ladies? Hmm.

Combustioneer Division of Steel Products Engineering Co., there's the live-wire crowd for you! Everybody sure missed Charley Brooks, this show. That guy's got everything . . . personality, energy, enthusiasm, looks. He should know the Combustioneer exhibit got third place recognition for Best Exhibit. Hope nobody missed the cute set-up Combustioneer used to prove the Triple Velocity Visorhead really and truly deflects the air downwards. Very, very clever, especially considering that the pinwheel not supposed to move wasn't glued down either. Joe Keyhole's Division for Investigating Demonstrations made a thorough check-up on that. The wholesome Mr. Roudanez came out with flying colors as well as spinning pin-wheels.

Met Bob Walshin, now making the Flame-Master burner in Chicago. Coupled to him was Mike Braden, who vows his low-pressure fuel unit is ready to market this year. Walshin and Braden have been doing testing and development work all over the Chicago area, needed no arm-twisting to make them admit their results are simply tops. Mrs. Braden got talking about Percy Fansler, in the FUELOIL & OIL HEAT booth. There's a lady who knows the burner business! Saw Carlos Morgan at the Penn Electric Switch Exhibit early Sunday morning in overalls, no less. (Just thought the boss ought to know.) And the exhibit looked swell. What with all that serrated ply wood and those Chartreuse chairs. After all the hard work was done the "heavy men" took over, M. E. Henning, R. S. Penn, E. B. Maire, R. S. Luscombe, R. V. Clark and K. W. Cash. The gimmicks passed out at the Penn booth were Talking Wires that said as audible as could be, "Penn Heat Anticipation." The three little words they're all saying these days.

We were all invited to the A.B.C. cocktail party at the Palmer House, hosted by Joe and Jack Hearst and assisted by Charley Bendix and Mr. Haight. These fellows really know how to entertain. They know something about making oilburners, too.

Detroit Lubricator was well represented by the presence of their Sales Manager Hohmeyer whom we saw making the rounds of all the exhibits. We only got a chance to say a fast "hello."

Matty Matheson Em-Ceed the Old Timers dinner at the Furniture Mart Club. Maccubbin and Jim Owens arranged a wonderful party for the boys and no one got pinched. Owens had the "fix in."

Sparky was swarming all over the new Winterway w.a.c. American Radiator was showing. On hand to extoll it were W. S. Senft, Harold Day, N. H. Richfield, and Paul Vieth. Did anyone see Allen Reif? He's one of the few generals not in the Pentagon these days. Those Super sparks were flying all week at Super Electric's stall, transformers are so hard to get these days that Charlie Rapiport and George Eulo displayed empty cases . . . they shipped the insides to their best customers.

On a rush call to the men's room, we stopped off to watch Ed Clifford, George Davis, and J. W. Jones picking up metal washers and loose nickels with their Kent double-suction furnace cleaner. Those guys slay me. Keyhole delayed so long he almost had a cleaning bill. H. T. Carey and Phil

GENERAL FUEL OIL FILTERS—*THE BEST* for your customers . . . and for you

DELUXE MODEL 2A-300
Best for large systems or for dirty storage tanks.

MASTER MODEL 2A-700
Built for the average to large size heating system.

STANDARD MODEL 1A-25
More than adequate capacity for small homes, space, and hot water heaters.

UNDERWRITERS' LABORATORY. Re-examination Service Listing means dependability—and customer confidence.

THESE *GENERAL* FEATURES INSURE A CLOG-FREE FUEL SYSTEM — FEWER SERVICING WORRIES FOR YOU — GREATER SATISFACTION FOR YOUR CUSTOMERS:

1. All-wool, large-surface cartridge used in 1A-25 and 2A-700, provides fine filtration and removes moisture due to condensation. The wire-mesh strainer inside the wool felt gives double protection. No more customer dissatisfaction from shut-downs due to clogged nozzles — no more costly "call-backs" to run up your service costs.

2. Easy-to-insert cartridges that insure clean oil. Every *GENERAL* filter installed means regular repeat business on cartridge replacements.

3. There's a *GENERAL* model for every system, large or small, Gravity or Pressure burner.

4. Original unit cost is low, installation is easy, and sturdy metal construction guarantees LIFE-OF-BURNER service.

GENERAL FILTERS INCORPORATED — GENERAL FUEL OIL FILTERS — 12890 WESTWOOD AVE. DETROIT 23, MICHIGAN

CANADIAN FACTORY BRANCH: CANADIAN GENERAL FILTERS, LTD., 2679 DANFORTH AVE., TORONTO 3, ONTARIO

RED SEAL®

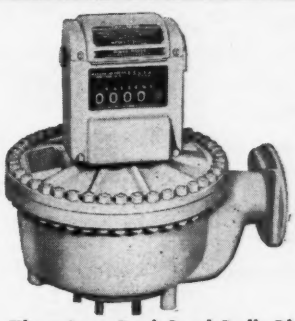
REMOTE CONTROL METERS

CUT LOADING TIME IN HALF

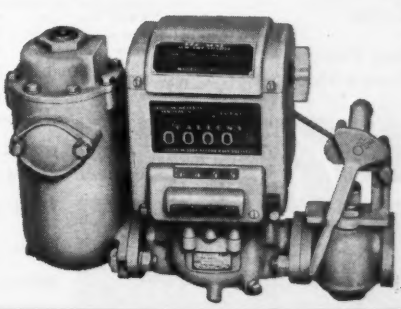
Trucks load up and move out in half the time formerly required at this Petro bulk plant! The saving was achieved in three ways: First, Red Seal remote printing registers permit control of all operations from *inside* the office. Second, adequate piping and larger meters — 4" and 3" Red Seals — increased the gpm. Third, the drive-through layout allows trucks to roll in and out without backing up. See *National Petroleum News,* July 13, 1949.

At the dispatcher's finger tips is a row of Red Seal remote control, ticket-printing registers. Each is accurately synchronized with one of the standard registers on the loading rack meters. No product can be drawn from any loading arm until the dispatcher has inserted a ticket and cleared the proper register.

If you want this close control, speed, and accurate accounting — with meters that *sustain* accuracy over millions of gallons — ask your engineers about including the new Red Seal Remote Control Meter Master System in your plans for more profitable bulk plants.



There's a Red Seal Bulk Plant or Tank Truck meter for every use. See the improved Auto-Stop quantity control and Print-O-Meter ticket printing registers.



20-Q

NEPTUNE METER COMPANY

50 WEST 50TH STREET • NEW YORK 20, N. Y.

Branch Offices

ATLANTA • BOSTON • CHICAGO • DALLAS • DENVER LOS ANGELES • LOUISVILLE • NO. KANSAS CITY, MO. • PHILADELPHIA PORTLAND, ORE. • SAN FRANCISCO • Canadian Factory, LONG BRANCH, ONT.

Krueger of Dielectric spent most of the week being neighborly with Robert Bell and Ernest Law of the Rajah Company, in the adjoining booth. They're only a few miles from each other back home, too. Both outfits occupy the top niche in their respective fields, these gents have a lot in common.

We saw Howard Hughes, Claude Schaefer, and Richard Ness selling miles and miles of Floorlevel baseboard radiation at General Automatic's booth. Keyhole spent hours trying to match up the serial numbers on the literature envelopes they were giving out—worth $10 cash if you could find someone else's with the same number. (Has Kefauver heard about this one?)

The Preferred Utilities steam generators were there, R. S. Bohn, W. H. Bohn, Ken Stevens, Morris Sherman, B. K. Breed, and some steel models too, all Rigged for Results. The 101 years in this business haven't slowed those Thatcher guys down, they practically moved Garwood, N. J. right into the Show. R. M. Cook, M. C. "Dan" Beard, Doug Turner, Sieffert, Meehan, Steffans, and Allan were on hand to overpower the crowd.

The Show wasn't the same without the human dynamo, Frank Scully, who stayed home this time to hatch up some more 'Money Saving Devices for the Petroleum Trade." Carl "Amphogel" Goddard and Art Gray were there to explain the new Remotamatic.

It took those ingenious lads of the Heil Company, Milwaukee, to concoct one of the best attention-getters at the show. They got an honest-to-goodness artist to make great big sketches giving ideas about Heil oilheating equipment. Did Heil draw crowds! Takes Joe Keyhole, though, to improve on a thing like that. Doesn't a model usually go with an artist? But it's all business with George Hochstein and Don Fricker, who whipped the display into shape using many long hours and giving out gallons of blood, sweat, and tears. The Heil family attended the show. Also H. F. Pugh, A. Meyer, Roy King, Herman Wagen, Fred Brubacker, D. Cunningham, Karl Mould (can he give out data on gph rates and model numbers!), K. F. Johnson, and William Chester, Jr.

One guy we missed was Maury Straub of Norge Heat. Had the drink we promised all set up in a Thermos bottle which we carried around all week. The drink was supposed to be a toast to his recent promotion to Sales Manager. He's on the ball!

Did you notice the big hand that grand and lovable Al Atwill received at the banquet? Like Old Faithful, he's always on the job. We like your new Quaker floor furnace, Al.

Let's all sit right down and write a letter to Borie Lewis of Perfex. Borie, unfortunately missed the show because of an emergency operation the first day of the convention. He's convalescing at St. Mary's Hospital, Milwaukee. The boys who carried on for Perfex were Vince Black, Allen Butler, V. Robbins Tate, Murray Bowman (Toronto, Can.) John Holzhauer, Bob Engbring, Gilbert Churchill, Paul Neese, and Jim McGuire. They say McGuire is looking for a language instructor to expand his operations. While not kidding poor Jim, the boys were pretty busy selling the new Perfex Prima-Ray, a burner mounted primary control that reacts to the radiant heat from the flame. Did we miss Chris Jensen, Jr., or was he out beating the bushes?

Century Engineering of Cedar Rapids showed their pride and joy, the "Midget Powerhouse" hot water boiler along with their complete furnace line. B. J. Lattner and J. O. Rosche praised the merits of the new boiler along with Stites, Considine, Hall, Mellott, Walker and Madden, all field men.

At least one pair of eyes weren't bleary at this show—Fireye and its new cousin Firetron, the only tube that sees all flames. Watch out Industry, Firetron's going places fast! How Larry Sibley, John Long and Phil Bredesen crowded so many sensitive gadgets into one booth should draw the attention of the Chicago Packing Industry.

Sparky walked by us mumbling that everybody's talking about delayed oil valve opening, they just never thought of opening the oil valve two minutes before starting the motor. He claims he invented this back in 1908. He says smoke spots, my eye! At this point, Walter Eckhart and Arnold, Jr. were seen chanting, "Two Proven Profit Makers," over and over.

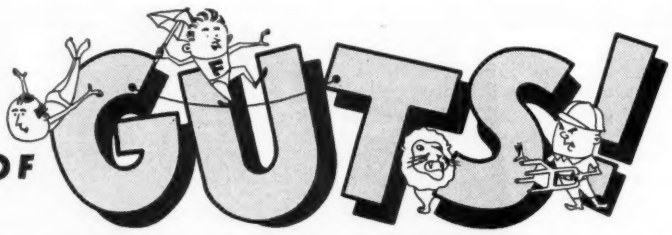
The Joe Keyhole award for Best Stories told at the show, goes to Julian Warren of Delco. While the dealers were still chuckling, Stuart Rice and Jim Williams would sign 'em up.

The boys from the Northwest, Harold Tietz, R. E. Majer, S. G. Crate, and C. B. Lovas were there with the Rossoe floor furnace fired with an undersize gun-burner.

We had a parade of welcome visitors swarming in and out of the FUELOIL & OIL HEAT booth all week, but just about tops on our welcome list was Ed Hayes of the C. A. Olsen Mfg. Co., Elyria, Ohio. You could look a long time without finding a better and more loyal friend.

Bob Gray, our very capable editor, got into a long, deep discussion with S. A. Loeb of Webster Electric and both of them almost missed the floor show at the banquet. Didn't see Pres Crewe, but I know he was around with Kleckner somewhere.

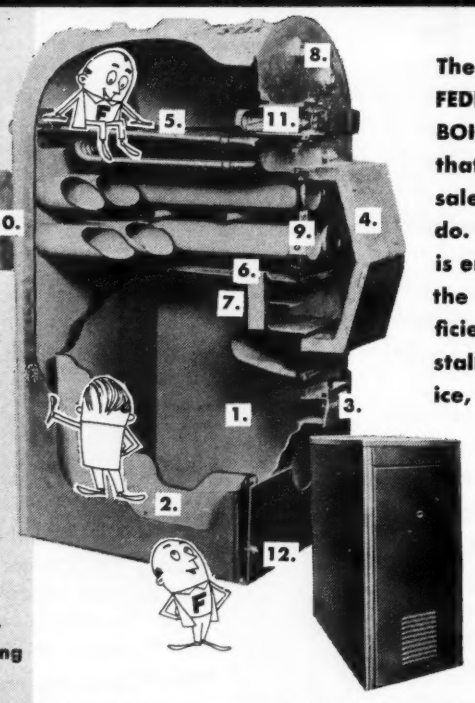
WE'VE GOT PLENTY OF GUTS!



THE KIND WE'RE PROUD TO SHOW!

FEDERAL LOW COST A.S.M.E. BOILERS

1. Large Furnace Volume
2. Water Leg Construction
3. Observation Port
4. Rock Wool Insulation
5. Federal Tankless Coils
6. Vertical Percolator Tube
7. 5/16" Steel Head Plates
8. 1/4" Wrapper Sheet
9. Expanded & Flared Boiler Tubes
10. Clean Out Door For Easy Cleaning
11. Low Water Cut-Off
12. Steel Plate Furnace Floor



The inside of every FEDERAL GAS OR OIL BOILER tells a story that no amount of sales talk could ever do. Every component is engineered to give the contractor an efficient, easy to install, simple to service, low cost boiler.

A BEAUT! Handsome, two-tone (blue & grey), baked enamel hammertone finished jacket. Built of heavy gauge sheet steel and glass wool insulated.

MODEL #FVW For small low cost homes with radiant heat, hot water or steam. 66,000 to 96,000 net B.T.U. output.

MODEL #FC Oil or gas fired units ideal for use with hot water, steam, or radiant heat systems. 77,000 to 312,000 net B.T.U. output.

MODEL #FD Ideally suited for launderettes and commercials. A stoker, oil or gas fired unit. 360,000 to 528,000 net B.T.U. output.

FEDERAL BOILER CO., INC. FBC

GRANITE & WEST STS., MIDLAND PARK, N. J.

FEDERAL BOILER CO., INC., General Offices Dept-FO-4
2610 E. Tremont Ave., Bronx 61, N. Y.
Please send me free bulletins.
Name.....
Address.....

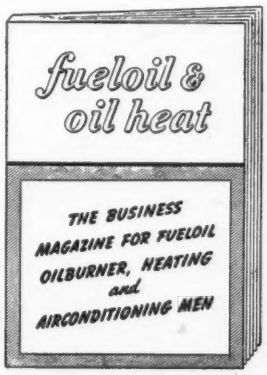
There's an OIL HEATING SHOW in EVERY ISSUE of fueloil & oil heat

Each month, you can display your products before more than thirteen thousand oilheating men, in the greatest oil heat show of them all—the advertising pages of FUELOIL & OIL HEAT.

Most of the manufacturers who exhibited their products at the April OHI Show in Chicago this year, regularly take a "booth" in the advertising pages of this magazine. The reason? High reader-interest on the part of dealers, jobbers, and manufacturers, and a lively, *vital* editorial content that sustains this interest.

FUELOIL & OIL HEAT is the prime information-source for the dealers who sell and install 88.4% of all oilburners, boiler-burner units, furnace-burner units, and accessories. A recent Fact-Finders Associates, Inc., survey revealed that readers regularly spend an average of 1¼ hours each month reading this magazine, and the advertising pages account for 48.3% of the time readers devote to each issue.

That's why it will pay you to exhibit your products in the MAY Issue. *Why not reserve your space now!*



Final Advertising Forms Close April 25th

Published by Heating Publishers, Inc.
232 Madison Ave., New York 16, N. Y.
Midwest: 549 W. Washington Blvd., Chicago, Ill.
For 32 Years the Industry's Authority

fueloil & oil heat

It was good to see the whole crowd from Cleaver-Brooks at their booth. There were 14 men at the Cleaver-Brooks booth including Frank Wymbs of New York, who has already developed crackerjack salesmen of his four sons. Some of the men from Milwaukee were J. V. Resek, Harold Holtz, Howard McCoy. They addressed the Cleaver-Brooks dealers' and distributors' meeting and had luncheon at the Palmer House.

One of our more prominent oilburner accessory supply houses, Robert Barclay, Inc., set up a booth that would knock your eye out. Exhibited everything from oilburners to nozzle filters. First time on public display was the new "Two-Tank-T" fueloil filter. Got to say hello to Commander Milton K. Arenburg, U.S.N.R., Larry Felker, Bart Geldigan, Emerson Spires, and Dick Collins. Ahem, a Chicago home team.

The latest thing to report on Williams Oil-O-Matic booth: "Lifetime Guarantee" on the Fifty-Ten oil-air nozzle. The display rated prize-winning recognition as usual, which makes everyone happy. Lon Casler is a big man in more ways than you can imagine. The entire staff of FUELOIL & OIL HEAT is grateful for the quick and effective action he took in an emergency.

By-the-way, Schoemaker made it very imperative to announce that Williams Oil-O-Matic has a new Management Manual for dealers. Attending the booth were Burritt, Davison, Stagg, Green, Pinkerton, Osborn, Wagner, Johnston, Earl, Pearson, Branch, and Robinson.

Saw everybody from Sundstrand Pump working hard all week. They had a full scale model fuel unit machined out of a solid block of Lucite, done in their own shops. Those machinists up in Rockford rate among the world's finest. The plastic model actually pumps oil. But even more dramatic is the use of a special type of aircraft oil costing $15 per gallon, with a reddish tint to better illustrate the actual operation of the unit. Ought to be fit to drink! Some of the men down from Rockford: L. H. Schuette, C. W. Lang, Pete Kjellstrom, and B. L. Douglas. Can Bruce Olson answer this one? Do Bermuda onions really grow in Bermuda? Or is it just a trade-name?

The last two canes of the season went to Abrahams and Henninger, in from Philadelphia. Uncle Fred Beckwith migrated from Boston to attend this one. Unk has done more for New England oilheating than any man we know.

We watched Roger Lyman of the Torrington Mfg. Co. grow pale when he showed up bright and early Sunday and learned that his roller-coaster fan booth had rolled astray. He located it just before the show opened, in time to do his stuff with Don Leslie, Jake Crawford, Anthony Casadei, and Dudley Robinson. They displayed the fan with the coasting hub, "good for a million starts and stops." Now which one of youse took the time to do all the counting? Huh?

Halos were floating over the Lynn booth as a Priest and a Saint talked combustion. E. K. Priest and Larry St. Jean drew crowds with those best-ever color slides of the flames their burner gives. That Lynn Spiral-Ex Head! Does it make the oil burn right!

Charlie White of Socony-Vacuum came all the way from Greenpernt, Brooklyn, where they bern fuel erl. Charlie has more inside facts on combustion developments than the Senators have on Costello!

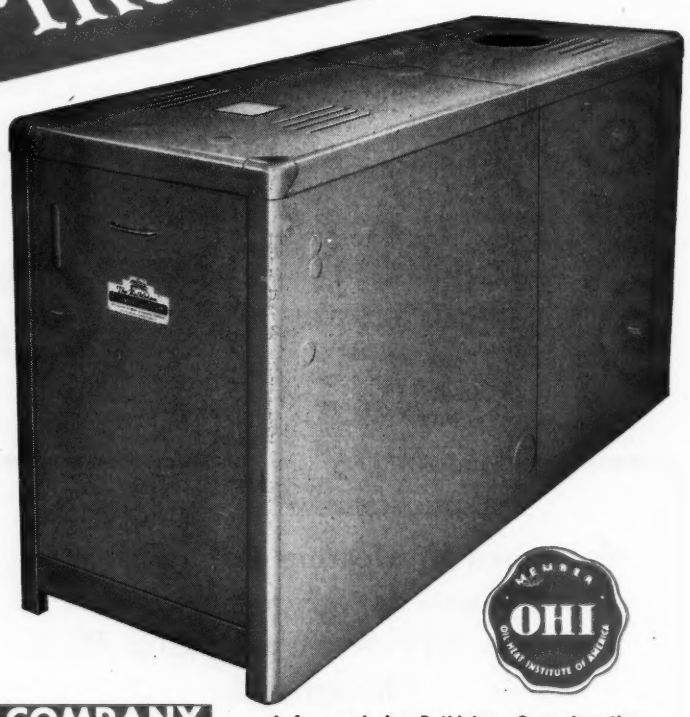
Speaking of fabulous operators, Lawrence Harvey was scouting the Pier too. Sid and he rebuilt a mountain of fuel units and controls last year. Aside from that, can these boys produce a swell catalogue covering everything needed for burner servicing! Congrats for the best thing of the kind Joe Keyhole ever cast his bleery eyes on!

Mercoid had an outstanding exhibit with all its fine controls set up like the gems they are. The background display panels consisted of white, blue, and tan with the name MERCOID illuminated in large green letters. When anyone mentioned VisaFlame the whole staff swooped down. Enthusiastic? That's putting it mild. Fenton Fisher's been teaching certain people we know that VisaFlame works by LIGHT, not by HEAT. Wait a minute and let's get that straight: VisaFlame CAN work by light. That it? Awfully glad to see McCabe, Courteol, Colterjohn, and Mercoid addicts from all over the country including Fisher of New York, Stauffer of Philadelphia, Johnson of Boston, and McCauley of Cleveland. A whole basket of orchids goes to Jim Owens for arranging that terrific floor show at the banquet. Jim's some talent scout!

D. L. Perrot and F. C. Adams came over from Saginaw, Mich. to attend the show and man the Jackson & Church exhibit along with a couple of local boys, J. B. Winston of Chicago and A. E. Duwe of Milwaukee. Their display included suspended units. Do those hung-up heat machines sell!

Bill Laudert, our good friend, had his son and daughter help him set up the Cole-Sewell exhibit Sunday afternoon. A clean-cut thing, it showed the Cole Draft Governor, the Draft Korektor, and the com-

The Bethlehem Crusade-a-therm



A BIG IDEA IN A SMALL PACKAGE

Designed, tested and manufactured to meet all the requirements of the average size home, its superiority over ordinary units is unquestioned. The C-liminator that completely eliminates smoke on start, is standard equipment on the Crusade-a-therm. It, and an electrical solenoid valve which cancels smoky shut-down and after-drip, guarantee trouble-free performance. There's never a trace of the old bugaboo of smoke, soot, and odor.

BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA

A few exclusive Bethlehem Crusade-a-therm territory Franchises are still available. Wire or write immediately for full information.

PENN PUSHES AHEAD TO GIVE YOU SUPPORT with strong national consumer advertising

Through the years, PENN has given you heating controls which are *second to none.* In fact, it has pioneered and *led* the control field since 1934 with HEAT ANTICIPATION . . . a principle of thermostat operation which holds temperature within one degree . . . *stops* HOT-n-COLD LIVING!

Now . . . PENN is giving you more than an outstanding product. It is giving you the support of a powerful *spring and fall* consumer advertising program which will *tell your prospects how to avoid* HOT-n-COLD LIVING! And we're asking them to see their heating dealer . . . *that means you.* Remember . . . for greater customer satisfaction, greater good-will, greater profits . . . recommend and install PENN heating controls. **Penn Electric Switch Co., Goshen, Indiana.** Export Division: 13 E. 40th Street, New York 16, N. Y., U. S. A. In Canada: Penn Controls Limited, Toronto, Ontario.

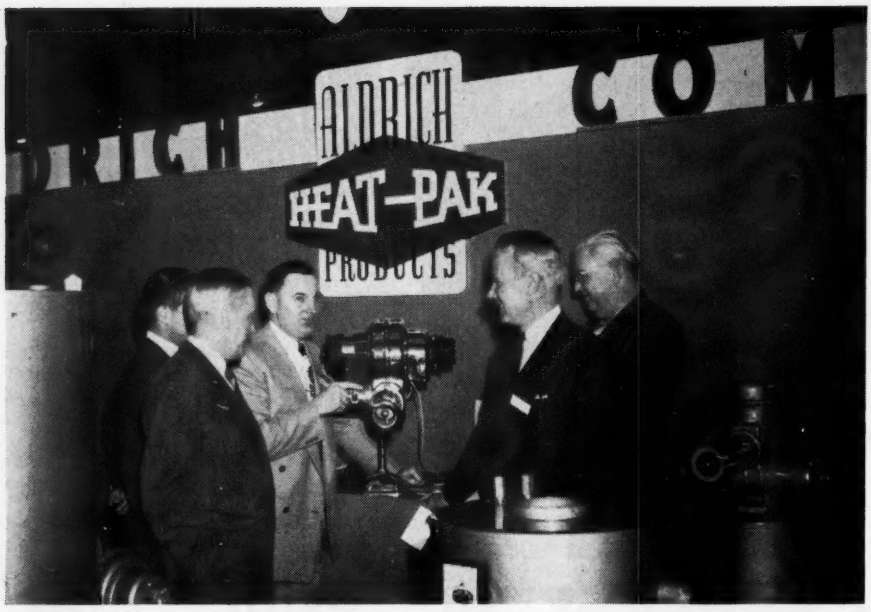
First in a series of advertisements in the May, June, September, October and November issues of

BETTER HOMES & GARDENS
AMERICAN HOME
NEWSWEEK

fed up with HOT-n-COLD LIVING?
enjoy 1° temperature control with
PENN
heat anticipation
PENN
Comfort with a capital "C"! That's what you'll enjoy when your heating system is controlled by the amazingly sensitive PENN *heat-anticipating* thermostat.
It "feels" approaching temperature changes *before you do* and starts the burner before the room has a chance to become uncomfortable. Result? Room temperatures are held within 1° regardless of outside weather conditions . . . *that's real, healthful comfort!*
This accurate control stops fuel waste caused by HOT-n-COLD heating. For even greater fuel economy of automatic day-night control, also get PENN Tem-Clock. If you want automatic heating at its best, ask your dealer for PENN *heat anticipation* . . . it costs no more!
Penn Electric Switch Co., Goshen, Indiana
ENGINEERED COMFORT
PENN
AUTOMATIC CONTROLS
Selected by leading manufacturers for over 30 years
FOR HEATING, REFRIGERATION, AIR CONDITIONING PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

PENN AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES



plete line of combustion testing instruments. Stan Burt manned the booth with Bill, but Harry Sewell was one of the good things missing at the show. Too Bad!

Got to hand it to the quadruple-threat Czarnecki boys—Stanley, Walter, Wesley, and Casimer! Not only Masters of Precision with their products, this year they came up with something really precise and beautiful in the way of a booth background—suitable setting for those sensational Eddington products! A bright new flame mirror just arrived in Keyhole's mail for that one. Now really boys, you shouldn't have! The vivacious Czarnecki girls started a "Down With Schulz" club.

Sam Shipley was writing letters down in Florida while Dave Wepman, Bill Kane, Charlie Neiman, Joe Hauf, Chris Fry, Clarence Randall, Harry Carpenter, Don Woltman, Gene Spangler, and Roy Mohn of York-Shipley dazzled us with the York-Heat "Great White Line." Boy, did they have something there, inside those furnace and boiler jackets!

At Fluid Heat's booth, Slim Donahue, the ex-advertising man, Bill Brannan, and D. Grey Knowles were delighting the fans with the most glamorous w.a.c.s we've ever seen—two-tone units with red front panels.

We'll now unroll the red rug for the newest addition to the Accessory Division—Acme Electric Corp. of Cuba, N. Y., represented at the show by W. E. Wilson, George Mabey, E. A. Miller, and a sharp-looking line of ignition transformers. Welcome, friends!

The gentlemen from the Aldrich Company put in a long, hard week. They concentrated on their Bantam and Series B oilfired boilers. Aldrich! There's a good old line of oilburners for you!

What a kick I get out of hearing P. M. Stephenson's broad eastern accent! Makes me think of the rushing surf pounding its way along the rock-bound coast of upper Maine, and it's the damndest thing because I've never been up there. That's what the movies do to kids like me, I guess. The work of Messrs. Fox and Mulder gave a great assist to this Aldrich exhibit.

Who was it asked the Aldrich men about that delayed oil valve gadget?

Bryant Doty brought his heavy-hitting gang along from Anchor Div., Stratton & Terstegge, New Albany, Ind. Heavy-hitters included Ed Clifford, L. E. Litkenhous, J. W. Oeffinger, R. J. Adams, the Chicago Rep., J. W. Akins, Jr., and Sam Helminger. Every day they gave away a tackle box and a minnow bucket as representative of some of the other things made in their plant. Oh you lucky winners! Joe Keyhole is all for such carrying-on at an oilheating show. The exhibit featured the new Anchor reverse-flow oilfired furnace unit, and the Anchor burners with Shell heads.

What a doggy show this one was! Blame Clarence Potter . . . and his scotty dog with the wagging tail. The dog's head was a Field draft control, and as blower-produced draft operated the control, the dog wagged his tail. If that's confusing, it's cause Joe Keyhole got dizzy watching the doggone dog. Anyhow, the two Smith boys, W. H. and E. A. were there along with W. M. Davis to explain Scotty's tricks. What's that about not installing a draft regulator on the smokepipe unless you use one that's got greater area than the chimney flue? Right—Oh, Mister!

Those were three very distinguished looking gentlemen in the Sparkler booth all week—the booth of the Sparkler Mfg. Co., maker of those surface-type fueloil filters. Keyhole had to send in somebody else. for he never goes where there's anybody distinguished looking. Anyhow, these Sparkler gentlemen appeared quite anxious to line up a number of good outlets for their products and made some very interesting remarks to prospective distributors. Wanna know how interesting? Find out from A. C. Kracklauer, Fred Leuthesser, or Harry DeGraw, Mundelein, Ill.

Lyle Hicks of Dongan transformer displayed "The First Oilburner Ignition Transformer Approved by the Underwriters," vintage 1922. Hicks had help from his son C. E., and from J. B. Evans and J. L. Souser of Philadelphia.

Talking about the Underwriters, did ya see Herb Witte and John Middleton, from the Laboratories, sizing up the products they'd listed. Couple of good guys there!

"Sam, the Scram Man," you know who we mean. Grand bunch from McDonnell-Miller did a wonderful job at the show. E. N. McDonnell proved just the right kind of toastmaster for the O.H.I. banquet. Didn't the crowd roar when he got going? George LaRoi is the most serious looking guy in the world when he talks to show visitors. How in the heck can he remember all those products by catalogue number?

McDonnell-Miller has some organization! Some of their men who appeared at the show: Nils Swanson, Leo Kmieck, John James, Charles Bottger, Dick Flickinger, Gene Eggers, Ramsay, Peary, Devlin, Mitchell, Johnson, Platt, and Gleason.

Clarence Bartling and Dick Gleason of Crescent Parts & Equipment Co., St. Louis, got lost in the shuffle just before the banquet, but we finally located them in the Lost & Found Dept., otherwise known as "The Bar."

Bye-Bye now, all youse dolls and guys! Only thing that gripes me is youse was all so swell at Chicago that I ain't been able to cuss you out this time in the real Joe Keyhole regular fashion.

Oil gains in Milwaukee Competing against Gas

OILBURNERS OPERATING in Milwaukee at the end of 1950 totalled 72,049, a 12.6% increase over the 64,010 in use at the end of 1949, according to figures released by Harold M. Mottram, secretary, Wisconsin Oil-Heat Association, Inc. At the end of 1949 oilburners accounted for 25.2% of central heating installations in Milwaukee and at the end of 1950 installations totalled 27.7% of the total.

The gain was achieved in spite of the fact that natural gas was available for domestic heating installations all through the year. Total gasheating installations in use at the end of last year advanced to 34,334, compared with a total of 12,192 at the end of 1949. Gas was used in 13.2% of domestic heating systems in Milwaukee at the end of 1950, up from 4.8% in 1949. Coal or coke installations in use declined to a total of 155,803 at the end of 1950, down from 179,585 the previous year. At year end coal and coke was used in 59.9% of Milwaukee's heating installations, a drop from 70.7% in 1949.

The healthy showing made by oilburners in Milwaukee can be attributed almost completely to the aggressiveness and ingenuity of the Wisconsin Oil-Heat Association and its members. A constant, appealing advertising and promotion campaign for oilheating is conducted and the group has shown on several occasions its ability to cope with unusual or emergency situations. Most recent example of this was described by Mr. Mottram on page 79 of the March issue of FUELOIL & OIL HEAT, where he told how the Association overcame fueloil supply difficulties resulting in the Milwaukee area from the railroad strike.

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SIMPLIFY YOUR Selling!

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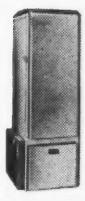
Luxaire

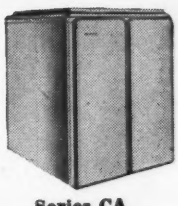
YOU SAVE TIME...YOU MAKE MORE PROFIT...

Series A Gas-Fired Steel Air Conditioning Unit.

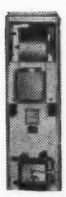


Series H Gas-Fired, Steel Utility Air Conditioning Unit.

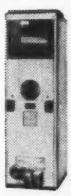
Series G Gas-Fired Gravity Furnace Available with Steel or Cast Iron Heating Element.



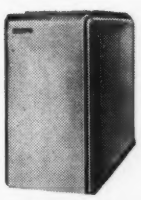
Series CA Gas-Fired Air Conditioning Unit. Cast Iron heating element.



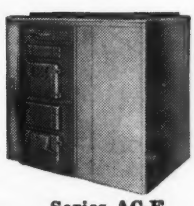
No. HC-95-E Gas Counterflow Unit, for Slab Floor, Perimeter Heating.



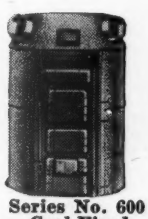
No. VHC-75-E Oil Counterflow Unit, for Slab Floor, Perimeter Heating.



Series O Gun, Oil-Fired Air Conditioning Unit. Steel heating element.



Series AC-F Coal-Fired Air Conditioning Unit. Steel Heating Element.



Series No. 600 Coal-Fired Gravity Furnace. Steel heating element.

Series C Coal-Fired, Cast Iron Furnace.

You Can Supply a Unit for Practically Any Heating Requirement. You Can Supply Units With STEEL or CAST IRON Heating Elements

When you make Luxaire your leader, you get two profit-making advantages

1. You simplify your buying.

2. You simplify your selling.

With Luxaire you avoid costly "shopping-around" as your Luxaire wholesaler has a complete and adequate stock to supply your requirements.

With Luxaire you can fill any order for practically any type or size or kind of heating unit. You establish and keep happy relationship with the architect—builder—homeowner.

The thousands of dealers who sell Luxaire advantages know that Luxaire means greater profits, faster turnover and satisfied customers. Ask your jobber for catalogs and prices on Luxaire.

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Luxaire HEATING & AIR CONDITIONING UNITS

fuelOil oilHeat

Revised 1950 installation Data

by
Robert Gray

THE FINAL ESTIMATES of 1950 installations of domestic oilburners and units reached the impressive figure of 846,815, somewhat higher than the preliminary estimate of 817,702 published in the January issue of FUELOIL & OIL HEAT. This represents a rise of 37.8% above the 614,712 installed in 1949 and was only 4.7% below the industry's all time peak of 888,083 in 1947.

Factory shipments for 1950 were 925,267, nearly 55% above the previous year. Larger dealer inventories accounted for most of the difference between shipments and installations.

The installation figure was calculated as follows:

Factory shipments	925,267
Less exports	13,421
Net U. S. deliveries	911,846
Dealer stocks increased	65,031
Actual installations	846,815

The number of new oil accounts during the year was 681,599. The difference between this figure and the number of installations made lies in the fact that 96,960 of the jobs put in were replacements of old oilburners and then there were losses to other fuels accounting for 68,256.

In explanation of the deduction from shipments for dealer burner stock increase, these were 54,478 on January 1, 1950 and had risen to 119,509 at the start of this year, a difference as shown of 65,031.

In the large table showing installations by states considerable detail is given on how the burners were used. The losses to other fuels are not shown separately but they are taken into account in arriving at the number operating in each state.

The Midwest again showed the largest gain in number of fueloil accounts, with 18%. Gains in other sections were: New England 14%; Mid-Atlantic 16%; South Atlantic 13%; South Central 10%; Mountain States 12% and Pacific States 9%. The average gain for the whole country was 15%. The Midwest gain rate is most significant, since that is where the cheapest gas heating is found.

The percentage distribution of burners in use at the start of this year shows: New England 17.7%; Mid-Atlantic States 41.7%; South Atlantic States 4.8%; Midwest 24.3%; South Central States 1.4%; Mountain States 1.3% and Pacific Coast 8.8%.

The new figure on the year's installations will naturally affect some of the data in the January issue. Any figure in that issue in any way related to oilburner installations should be raised by 3.6% unless the revised figure appears in this new table.

Distillate Oilburner Installations By States, 1950

	Burners In Use 1/1/50	INSTALLATIONS				*Burners In Use 1/1/51*
		New Homes	*Replacements*	*Conversions*	*Total*	
Maine	56,817	2,937	902	4,036	7,875	63,495
New Hampshire	52,851	3,632	1,115	4,991	9,738	61,199
Vermont	14,817	1,106	339	1,519	2,964	17,365
Massachusetts	429,343	24,700	7,582	33,938	66,220	485,747
Rhode Island	56,673	3,727	1,144	5,121	9,992	65,226
Connecticut	192,976	11,813	3,626	16,232	31,671	220,000
TOTAL NEW ENGLAND	803,477	47,915	14,708	65,837	128,640	913,032
New York	811,794	54,960	16,871	75,515	147,346	940,302
New Jersey	398,778	31,239	9,589	42,922	83,750	472,022
Pennsylvania	369,137	29,154	8,949	40,058	78,161	437,500
Delaware	28,690	2,116	650	2,908	5,674	33,648
Maryland	191,161	9,602	2,948	13,193	25,743	213,516
Dist. of Columbia	53,166	3,064	941	4,209	8,214	60,290
TOTAL MID-ATLANTIC	1,852,726	130,315	39,948	178,805	348,888	2,157,278
Virginia	109,619	5,622	1,726	7,725	15,073	121,102
West Virginia	1,009	284	87	391	762	1,667
North Carolina	48,116	4,548	1,396	6,250	12,194	58,096
South Carolina	15,471	1,042	320	1,432	2,794	17,682
Georgia	9,461	790	242	1,085	2,117	11,173
Florida	39,342	1,011	310	1,389	2,710	41,073
TOTAL SOUTH ATLANTIC	223,018	13,297	4,081	18,272	35,650	250,793
Michigan	202,900	16,772	5,152	23,042	44,966	234,415
Ohio	71,860	10,575	3,246	14,531	28,352	94,027
Indiana	67,596	8,712	2,674	11,970	23,356	85,513
Illinois	192,992	21,599	6,630	29,677	57,906	236,375
Wisconsin	140,612	13,766	4,226	18,913	36,905	167,540
Minnesota	166,032	10,202	3,132	14,017	27,351	183,460
Iowa	67,348	7,423	2,279	10,198	19,900	82,214
Missouri	68,508	3,822	1,173	5,251	10,246	74,779
Kansas	7,300	600	184	825	1,609	8,426
Nebraska	39,372	2,148	659	2,951	5,758	42,786
South Dakota	21,393	1,295	398	1,779	3,472	23,592
North Dakota	21,158	1,579	485	2,200	4,264	24,072
TOTAL MIDWEST	1,067,071	98,493	30,238	135,354	264,085	1,257,199
Kentucky	5,906	758	233	1,041	2,032	7,606
Tennessee	10,397	821	252	1,129	2,202	12,172
Alabama	6,862	379	116	521	1,016	7,647
Mississippi	1,190	95	29	130	254	1,382
Arkansas	2,058	126	39	174	339	2,323
Louisiana	9,156	189	58	261	508	9,452
Oklahoma	1,411	127	39	174	340	1,688
Texas	27,082	663	204	911	1,778	28,201
TOTAL SOUTH CENTRAL	64,062	3,158	970	4,341	8,469	70,471
Montana	5,268	568	174	782	1,524	6,408
Idaho	10,657	979	301	1,345	2,625	12,555
Wyoming	2,558	158	48	217	423	2,831
Colorado	9,249	505	155	695	1,355	10,079
Utah	7,578	821	252	1,129	2,202	9,224
Nevada	8,742	570	175	782	1,527	9,744
New Mexico	2,471	95	29	132	256	2,600
Arizona	13,021	316	97	433	846	13,250
TOTAL MOUNTAIN STATES	59,544	4,012	1,231	5,515	10,758	66,691
Washington	147,623	8,844	2,715	12,152	23,711	166,855
Oregon	92,808	6,665	2,046	9,157	17,868	106,774
California	180,206	3,315	1,023	4,588	8,926	183,041
TOTAL PACIFIC	420,637	18,824	5,784	25,897	50,505	456,670
TOTAL UNITED STATES	4,490,535	315,834	96,960	434,021	846,815	5,172,134

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Here's the line that's setting the pace in *Shirtsleeve Comfort* and furnace value. A complete line of warm air equipment—winter air conditioners, gravity furnaces, conversion burners, highboys, lowboys. Models and sizes for practically any warm air heating need. Outstanding design and creative engineering—for maximum performance. Top quality materials and construction—for a long life of trouble-free comfort. Quality features home owners want. All backed by Ingersoll's many years of heating experience, engineering leadership and precision manufacturing.

And for *you*—appeal-packed literature, ad mats, co-op ad plan, decals, display materials and other sales promotion aids, factory engineering assistance, distributor help.

Want to let *Shirtsleeve Comfort* sell for you? Hustle that coupon back to us and we'll send you all the competition-beating details.

ENGINEERING B-W PRODUCTION

INGERSOLL PRODUCTS DIVISION
Borg-Warner Corporation
Kalamazoo, Michigan

Ingersoll
HEATING EQUIPMENT
for Shirtsleeve Comfort

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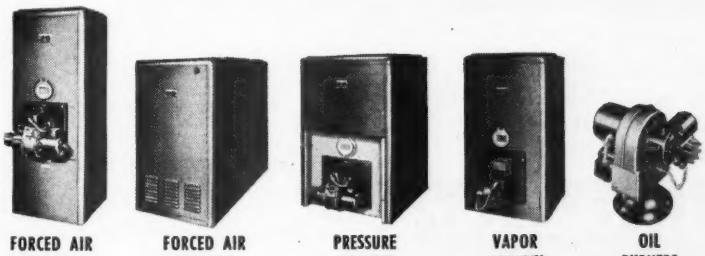

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fuelfoil & oilheat

Oil Line copper Tubing Now officially sanctioned

IN THE MOST RECENT amendment to the copper control order M-12 of NPA, the use of copper tubing for oil lines from tank to burner is blessed by being specifically mentioned as not restricted.

Copper tubing and brass pipe for heating lines are prohibited, as in steam or hot water heating systems. They are permitted, however, in hot and cold water lines for domestic water supply.

DO Ratings for Repairs Available through Order

REPAIR PARTS FOR oilheating systems can carry a DO rating from the dealer to a supply jobber or manufacturer under NPA Regulation 4, commonly known as the MRO order. MRO stands for maintenance, repair and operating supplies.

Any commercial or apartment user of oilheating extends the DO-97 rating for MRO to his dealer, the dealer relays it in turn to his supplier.

The residential oilheating user may not initiate a DO-97 rating but he can indirectly get the benefit of it. An oilheating dealer who uses up his stock of burner repair parts on individual homes may extend the DO rating to his manufacturer for a lump purchase of enough parts to give him a normal supply. His purchases in any quarter under MRO may not exceed one-fourth of his purchases in the full year 1950.

To extend a DO rating for MRO the dealer simply writes on his order "DO-97, certified under NPA Regulation 4" and then signs his name.

❖

Fueloil Distributors Get repair Priorities

UNDER THE CONDITIONS of Order M-46 the National Production Authority has given the oil industry permission to establish its own priorities for maintenance, repair and operating supplies.

This covers for the fueloil distributor whatever he may need in the way of bulk plant, delivery equipment and office replacements.

When repair or operating supplies are needed the oil man makes out his order and first writes on it, "DO-97, certified under NPA Regulation 4." Then he adds "The undersigned certifies that the rating hereby applied is authorized by and is properly used pursuant to the provisions of Order M-46." Then he adds his signature.

The advantage in the M-46 over the simple DO-97 used throughout the civilian economy for maintenance supplies is that there is no limit on the quantities that may be ordered with M-46. However, on an order exceeding $2,000 the buyer must send two copies to the Petroleum Administration for Defense, Washington 25, D. C., for approval before placing the order.

❖

Bulk Plants exempted From NPA Order M-4

NPA ORDER M-4, as amended February 19, 1951, prohibited commencement of certain types of buildings, structures and projects and required NPA authorization for other types. A series of

Eddington
Oil Burner Filters

Check your Eddington needs here:

- ☐ FILTERS
- ☐ NOZZLES
- ☐ VALVES
- ☐ STABILIZERS & AIR CONES
- ☐ STRAINERS
- ☐ ADAPTORS
- ☐ INSPECTION MIRRORS
- ☐ SERVICEMAN'S NOZZLE KITS

Why they're extra-important to YOU . . . *today*

You're due to be busier in the days ahead. So more than ever you'll want to depend on Eddington products. Eddington Filters, for instance, are *proved* reducers of service interruptions. They're big in filter area, do a thorough filtering job, need infrequent cartridge change. They'll do their part to keep your service up to par, no matter what's ahead.

Want information on any of the items listed? Just drop us a postal; you'll get a quick reply.

EDDINGTON METAL SPECIALTY COMPANY
1050 Czarnecki Street, Eddington, Pa.

MACK TRUCKS

Get Things Done!

● Extra effort — that's the order of the day as American industry swings into high gear to meet the growing demands of the nation's expanding defense program.

Nowhere is this more important than in vital truck transportation — the mobile assembly line that keeps raw materials flowing to plants and factories... speeds the products of America's farms and industries to consumers and the armed forces.

Here's work that's cut out for Mack trucks... jobs where sturdy Macks show at their best in *extra* strength and stamina, *extra* performance and *extra* dependability.

Your nearest Mack branch or distributor will show you how Mack's exclusive design and construction can cut *truck absenteeism* on your particular job... *get things done* faster, more dependably and with lower cost. You'll find it's a story well worth hearing.

Mack TRUCKS

...outlast them all

Mack Trucks, Empire State Bldg., New York 1, New York. Factories at Allentown, Pa.; Plainfield, N. J.; Long Island City, N. Y. Factory branches and distributors in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

Mack Model LFT tractor serving Griffith-Consumers Co. of Washington, D. C.

He told me,"Your competitor offered one important thing you didn't —Honeywell Controls!"

Losing a Job Was my Secret of Success!

Frankly, I was plenty worried.

I was bidding on a lot of modernization jobs—trying every idea I knew. But I just wasn't getting the contracts. And that was bad—because modernization was already a big-money market and growing bigger every week.

The turning point finally came, though—the day I lost a big job I wanted badly. That day I decided to stop guessing—and I went to the prospect and asked *why* I'd lost.

"That's simple," he said. "I liked your reasonable price, your smart planning, your company's good reputation. But your competitor offered one mighty important thing that you didn't—*Honeywell Controls throughout*. I *know* Honeywell products are tops—that their systems really work—that their service is the best."

Well, what he said made sense. I know, too, that Honeywell is the best. Yet I hadn't bothered to insist on getting Honeywell Controls on all my furnaces and conversion burners and air conditioning equipment.

I didn't waste *any more* time. On my very next estimate I specified Honeywell Controls across the board. And I *got* the order.

What's more, I'm getting my share—and then some—of the modernization jobs I bid on.

Believe me, I'll never install anything but *Honeywell* Controls from now on!

☆ ☆ ☆

For facts *you* need to put the Honeywell line to work for you—read the column across the page.

MINNEAPOLIS **Honeywell**

First in Controls

questions and answers, prepared by the Office of Small Business, National Production Authority, has been issued to explain briefly the order's major provisions.

Answering the query, "What types of construction do not require NPA authorization?" the Office included "Wholesale supply facilities for fueloil, gasoline, coal, gas distribution systems and pipelines."

Field offices of the Department of Commerce can supply additional and more explicit information about the order.

❖

Windows and Ducts Affected by NPA Order

GRADUAL ELIMINATION of the manufacture of aluminum windows and air ducts was accomplished by an order issued on February 21 by the National Production Authority. It directed that residential type aluminum windows and aluminum ducts used for heating, ventilating and air conditioning may be completed up to June 30, if their manufacture or assembly is begun by April 30. Non-residential type aluminum windows may be completed up to June 30, regardless of when manufacture is commenced, providing that orders for them were received by the manufacturer before February 20.

During the months of March, April, May and June manufacturers are prohibited from using for the making of windows or ducts more than 65% of their average monthly use of aluminum for the same purpose in the first half of 1950. After June 30 these items may not be manufactured.

❖

Manufacturers Can Get NPA base period Relief

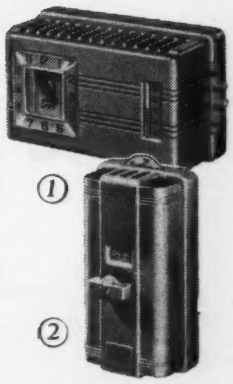
SEVERAL of the NPA restrictive regulations on the use of critical materials (copper, aluminum, etc.) allow a manufacturer to use in any calendar quarter a stated percentage of the amount he used in a base period. The base period is usually the average quarter in the first half of 1950.

There would be little objection to this basis if the manufacturer could later use in the summer and fall

Greater familiarity with Honeywell products will help you get more modernization jobs. So be sure you know these

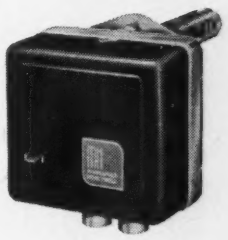
Facts it pays to know!

Honeywell Thermostats



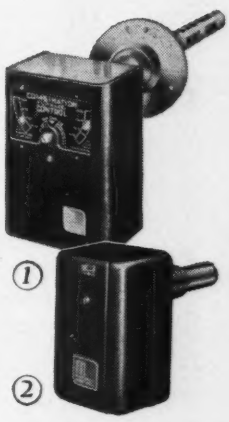
1) *The new Chronotherms* are the most sensitive, most accurate thermostats ever built! They automatically lower the temperature at night, automatically raise it in the morning. Standard model illustrated. 2) *Honeywell's Time-O-Stat* is distinguished from ordinary thermostats by "Day-Nite" control which provides automatic morning pick-up. With this thermostat your customers can turn off the furnace without making a trip to the basement. *The famous Acratherm* (*not shown*) is hard to beat—dollar for dollar—for fine temperature control. Simple to calibrate, set and adjust.

Honeywell Protectorelays



1) *The RA117 Protectorelay* is designed for fast, reliable operation at low stack temperatures. Can be mounted at an angle, if desired. Ignition failure trips a switch that shuts down the burner. Recycles on flame or power failure. For intermittent ignition type burners. *The RA116 Protectorelay* (*not shown*) is similar in appearance to the RA117, but is designed for use with constant ignition type burners.

Limit Controls



1) *The LA401 Combination Furnace Control* has an extremely rapid rate of response, is highly sensitive. A linkage stop makes it impossible to adjust fan-on setting above limit control. 2) *L444 Immersion Aquastat* has gained wide acceptance because of its proved dependability. Detachable well. Amply spaced internal wiring connections. Easily-read scale. *Honeywell's C402 Low Water Cutoff* (*not shown*) responds immediately to changes in boiler water level. Easy, external installation. Comes complete with quick hookup fittings and copper tubing. Manual reset lever included. *The C401 Low Water Cutoff*, (*not shown*) for boiler insertion, is a low cost control because simplified installation requires fewer parts. Makes sludge less troublesome. Manual reset is standard for this control.

MINNEAPOLIS **Honeywell**

Minneapolis-Honeywell Regulator Company
Minneapolis 8, Minnesota

months the stated percentage of those periods a year ago. But he can't. He is frozen to the winter and spring base period and this applies to all of his subsequent quarters.

This provision works a hardship on the oilheating industry, since only about a third of the year's burners are made in the first half of the year. It was the intent of the regulations to allow some adjustments for seasonal variations, but this was not incorporated in the law, since almost no two companies are affected alike, even within a single industry.

To get relief from base period inequities it is necessary for an individual company to file an appeal for a base period adjustment. In the heating industry a number of companies have so filed and been straightened out.

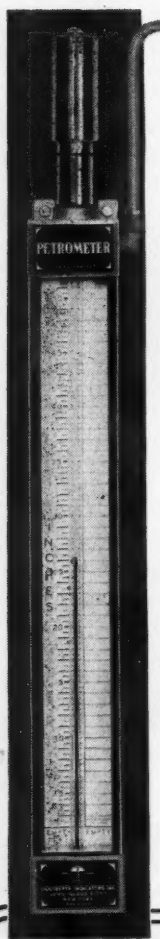
If you want to make such an appeal and have the facts to prove your case, write to the Heating Branch, Building Materials Division, NPA, 4th and G Streets, NW, Washington 25, D. C., for the necessary forms and instructions.

Make Every Installation

Competition-Proof . . . Install a

PETROMETER

Tank Gauge



OUTSTANDING — HERE'S WHY:

- **METAL AERATOR:** 75% better in performance and appearance than the troublesome outmoded rubber bulb.
- **DIRECT READING DUAL SCALES:** Constant reading in inches and gallons. Always ready. Easy to read.
- **FLOOD PROOF:** Positive gauge protection when tank is overfilled. Automatic Red "X" fluid check.
- **NO TOOLS NEEDED** to adjust or replace scales when tanks are not level.
- **SCALE READINGS:** Adjustable to take care of tank pitch.
- **WARNING SIGNAL:** Red transparent plastic strip may be moved upward or downward. Warns when to re-order.
- **NEW LOOK:** Pleasingly compact—sturdy—dependable.
- **REMOTE READING:** The New Petrometer is simple to install and maintain. The gauge may be located any place above or below the level of the tank; up to ONE QUARTER MILE distant from the tank.
- **FLEXIBLE SCALES:** May be removed or adjusted easily. Gallon conversion figures may be typed on scale.
- **APPROVED BY:** Underwriters' Laboratories and Factory Mutual Laboratories.

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LIQUIDEPTH INDICATORS INC.

FIVE STAR SQUARE

LONG ISLAND CITY 1, NEW YORK

Release proposed Rules For fueloil Pricing

NEW PROPOSED REGULATIONS for fueloil pricing have been prepared by the Office of Price Stabilization and are expected to be promulgated soon. It is thought that sellers under the regulations will be permitted to add to their ceiling prices transportation rate increases incurred after January 25. The order covers wholesale and all tank wagon marketing and exempts sales at service stations, which are covered by the retail price order.

The wholesale order lists six provisions as a basis for determining a seller's ceiling price:

1. The highest price charged to a purchaser of the same class in the period December 19, 1950 to January 25, 1951.

2. If no sale was made, the highest offering price to a purchaser of the same class in that period. (Both these are the same as now existing under the General Ceiling Price Order.)

3. In the case of tank wagon sales only, sellers may use the ceiling price of "representative tank wagon seller" to be designated by OPS for each area and whose price may be obtained from OPS by inquiry.

4. If a ceiling price cannot be determined on these bases, seller may use the ceiling price of any competitor of his own class for the same product.

5. If the above price should not be in line with the customary pricing practice of the seller, he may determine which price would be "in line" with his practice and file such proposed price with OPS for approval.

6. Or, he may seek to establish a new price and file the proposal, with supporting data, with OPS.

OPS is planning to spell out f.o.b. shipping point prices for tank car and other bulk prices. Where this is done, these will supersede the methods listed.

❖

Paul Holmes is the newly-appointed Chief of the Heating Branch, Building Materials Division, National Production Authority. He has been closely connected with the heating business and formerly was with the National Radiator Co. The section he heads has jurisdiction over oilburners.

Property owners want the utmost in *economical* automatic heat. You can offer that in Gilbarco oil-fired warm air furnaces or winter air conditioners — available in models for every type of installation. And they're easy to sell to your customers, because they feature such exclusive values as the patented Gilbarco Economy Clutch.

Be prepared to sell *any* type of heating job with Gilbarco oil heating equipment—domestic or commercial. **Some highly profitable franchises are still available in areas west of the Appalachians.**

Proved oil Reserves Reach all-time High

Reserves and Production

RESERVES	December 31, 1949	December 31, 1950	Increase 1950 Over 1949
	Barrels of 42 gallons		
Crude Oil	24,649,489,000	25,268,398,000	618,909,000
Natural Gas Liquids	3,729,012,000	4,267,663,000	538,651,000
Total Liquid Hydrocarbons	28,738,501,000	29,536,061,000	1,157,560,000
	Thousands of Cubic Feet		
Natural Gas	180,381,344,000	185,592,699,000	5,211,355,000

NEW SUPPLIES DEVELOPED IN	1949	1950	Increase 1950 Over 1949
	Barrels of 42 gallons		
Crude Oil	3,187,845,000	2,562,685,000	(–)625,160,000
Natural Gas Liquids	386,776,000	766,062,000	379,286,000
Total Liquid Hydrocarbons	3,574,621,000	3,328,747,000	(–)245,874,000

PRODUCTION	1949	1950	Increase 1950 Over 1949
	Barrels of 42 gallons		
Crude Oil	1,818,800,000	1,943,776,000	124,976,000
Natural Gas Liquids	198,547,000	227,411,000	28,864,000
Total Liquid Hydrocarbons	2,017,347,000	2,171,187,000	153,840,000
	Thousands of Cubic Feet		
Natural Gas	6,245,041,000	6,892,678,000	647,637,000

DESPITE RECORD-BREAKING PRODUCTION of natural gas liquids and natural gas and near record-breaking production of crude oil, the nation's proved reserves were boosted to all-time peaks in 1950. This was revealed in a joint report issued on March 8 by the American Petroleum Institute and the American Gas Association.

The report, which covers discoveries, revisions of previous estimates and extensions of known pools during the 12-month period ending December 31, 1950, was compiled by special reserves committees of both trade associations.

Total new supplies of crude oil and natural gas liquids developed in 1950 amounted to an estimated 3.3 billion barrels. With total production of liquid hydrocarbons estimated at close to 2.2 billion barrels, this resulted in a net increase of more than 1.1 billion barrels in known proved reserves. Proved reserves of liquid hydrocarbons at the end of 1950, as a result, rose to an estimated 29.5 billion barrels, an all-time high.

Indicated 1950 production of liquid hydrocarbons represented an increase

For nearly half a century Heating Engineers and Contractors have found that

You can sell and install Johnson Oil Burners with Confidence!

THERE'S A JOHNSON BURNER BUILT and ENGINEERED TO MEET EVERY HEATING NEED

of

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★ HOTELS
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With confidence that they will really save oil, and that their operating and maintenance costs will be low. Every burner we produce has been engineered to give that kind of service.

We've been building oil burners for 48 years. From the first, we have aimed at producing *more heat* from *less oil*. All our accumulated experience, all our engineering skill has been concentrated on that goal. It's little wonder that the long-term performance of our burners is hard to equal . . . and that heating experts, the world over, have come to think of "Johnson Oil Burners" as one of the great names in the industry.

You'll find it's a good name to remember when you want heating equipment on which you may safely depend. There's a Johnson Burner for every need. We will gladly cooperate with detailed information.

S. T. JOHNSON COMPANY

940 Arlington Avenue, Oakland 8, Calif.
401 No. Broad Street, Philadelphia 8, Pa.

Johnson Oil Burners

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If you sell one of these famous space heaters

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BARNES
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CUSTOM-AIRE
DUO-THERM
ENTERPRISE
ENTERPRISE *(Canada)*
ESTATE-HEATROLA
FINDLAY *(Canada)*
FLORENCE
H. C. LITTLE
HERCO *(Canada)*
INTERNATIONAL
JUNGERS
LACO
LONERGAN
MAGIC CHEF
MONARCH
MONARCH *(Canada)*
MONOGRAM
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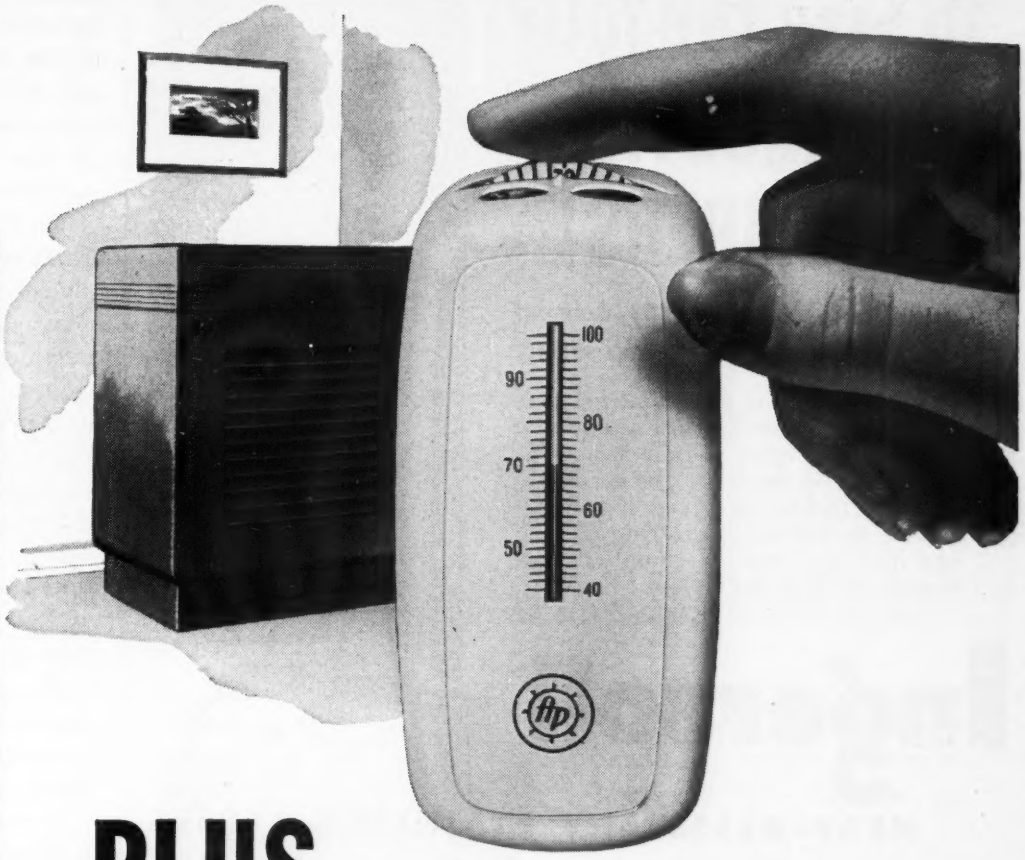
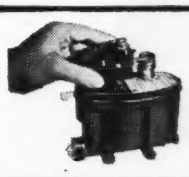


PLUS ALL THE LUXURY OF AUTOMATIC HEAT — WITH LOW-COST, EASY TO SELL A-P COMFORT CONTROLS

Yes, if you sell one of the famous-make space or trailer heaters listed here you can offer every customer the luxury of true automatic, thermostatically controlled heat! This means easier selling, because you can offer comfort and convenience equal to the most expensive kind of heating, with no wasted heat — and substantial fuel savings!

What's more, this easy-to-sell comfort means ADDITIONAL PROFITS for you. Write now for Bulletin T-2 on A-P Comfort Controls.



EASY TO INSTALL

There's an A-P Electric or Mechanical Comfort Control actually engineered to fit these heaters. Just mount conversion top on present manual control; connect to thermostat and transformer. Mechanical thermostat even eliminates wiring!

DEPENDABLE Controls Famous for completely reliable service . . . in oil heating . . . gas heating . . . refrigeration.

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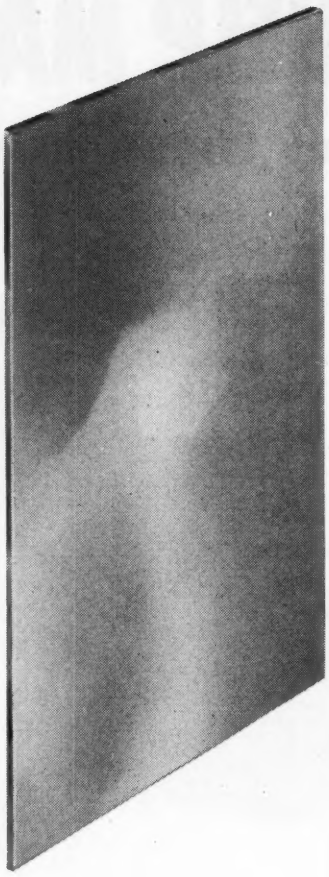
Sheared to Size for Your COMBUSTION CHAMBERS!



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We are specialists in producing heat-resistant stainless steels for combustion chambers. Whether you are a large or small user of these steels our steel-making facilities can offer exceptional service by especially shearing to your specified combustion chamber steel blanks, or multiples thereof.

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Give your combustion chambers all four operating advantages

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ENGINEERING B-W PRODUCTION

of 153 million barrels over the amount produced in 1949, but fell short of topping 1948's record high by a comparatively small margin, 60 million barrels.

Proved reserves of natural gas were estimated at 185 trillion cubic feet at the close of 1950, a net increase of 5.2 trillion cubic feet. Production of natural gas, which set a record in 1950, was estimated at 6.8 trillion cubic feet an increase of 647 billion cubic feet over 1949.

The proved reserves of liquid hydrocarbons and natural gas reported apply only to those reserves whose locations and extent have been proved and measured. They do not include any estimate of oil or gas which may underlie the vast untested acreage which appears favorable to the accumulation of oil and gas in the United States. American oilmen have added to the nation's petroleum reserves every year since 1933 except one war year. In the 18 year period proved reserves have more than doubled.

The API reserves committee estimated crude oil reserves, the AGA committee, natural gas and both committees estimated natural gas liquids.

A thumbnail summary of the report is shown in the table.

The gas production figures indicated are net after deducting only the amount of gas returned to reservoirs for cycling and pressure maintenance. They include gas put into underground storage.

OPS Advisory Committee Named on oil Pricing

A NATIONAL PETROLEUM Industry Advisory Committee to help draft oil pricing regulations has been named by the Office of Price Stabilization. The Committee recently reviewed with Petroleum Branch officials the proposed regulations establishing retail prices for oil products.

Members of the committee are: Eugene McCabe, Tide Water Associated Oil Co.; J. W. Daker, Standard Oil Co. of Ohio; Ralph Cathcart, The Texas Co.; Newcomb Taylor, Hancock Oil Co. of California; R. S. Baity, Standard Oil Co. (Ind.); B. L. Ma-

jewski, Deep Rock Oil Co.; Henry Schwartz, Paragon Oil Co.; George Hardens, Standard Oil Co. of Calif.; A. L. Nickerson, Socony-Vacuum Oil Co.; E. H. Collins, Esso Standard Oil Co.; Everett Wells, Ashland Oil & Refining Co.; W. S. Zehrung, Pennzoil Co.; Harry Kennedy, Continental Oil Co.; Max Fisher, Aurora Gasoline Co.; Wiley Butler, Coastal Oil Co.; John Harper, Harper Oil Co.

❖

New steel Restrictions Bypass Oilheating

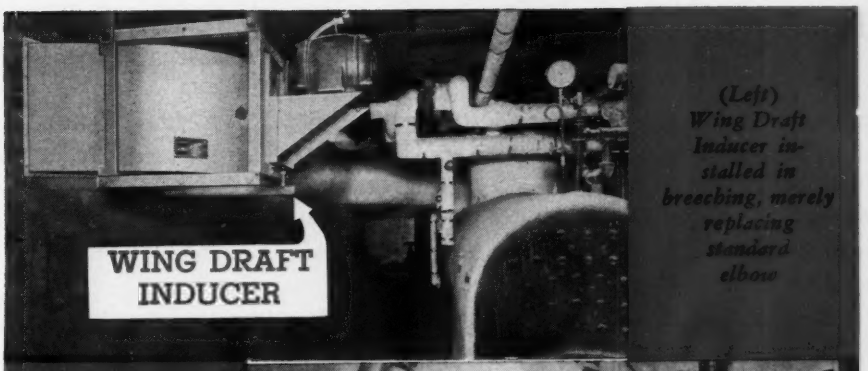
IN RECENT WEEKS there has been a lot of publicity over the forthcoming steel restriction order. It was to hit motor cars and about all other kinds of consumer durables including a great variety of appliances. There was naturally some concern in oilheating circles.

The order, M-47 of NPA, was eventually issued on March 7. Steel usage is cut 20% on a long list of products, but there is no mention of oilburners, boilers or furnaces. The principal point on which they affect our group is "Hot water heaters, domestic residential type." They are cut back 20%. Stoves are also cut back, presumably including space heaters.

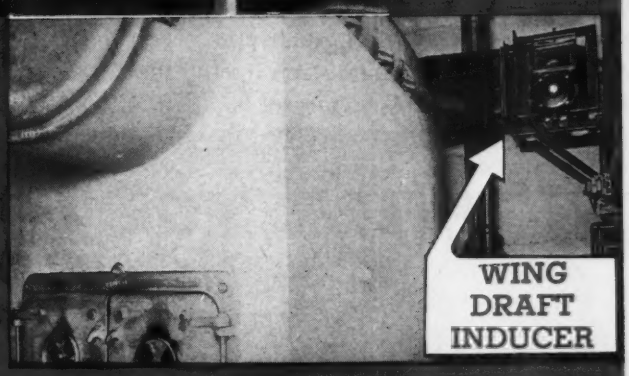
Reducing the steel consumption of such vast industries as motor cars, household appliances, civilian aircraft and a host of others as much as 20% should go a long way toward easing the very tight supply situation in the market. Naturally, defense industries will need much of the savings, but still you can't take such large consumers out of the picture by 20% without bringing some relief to other civilian segments.

❖

Michael C. Crotty, president of The Crotty Mfg. Co., Inc., Flushing, N. Y., producers of domestic and commercial steel boilers, has been named Deputy Commissioner in the Department of Commerce of the City of New York. Commenting on his appointment to the position by Mayor Vincent R. Impelliteri, Mr. Crotty expressed gratification at the opportunity to work for the betterment and development of industry and commerce in the City of New York.

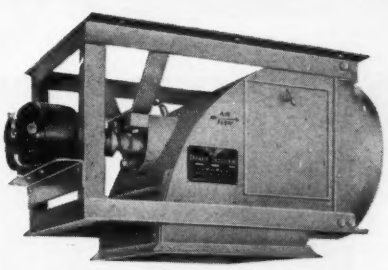


(Left) Wing Draft Inducer installed in breeching, merely replacing standard elbow



(Right) Wing Draft Inducer installed in elbow of breeching operating automatically with oil burner

How to Insure Positive Draft



Write for a copy of Bulletin on Wing Draft Inducers

The Wing Draft Inducer provides a means for furnishing positive, uniform, adequate draft for low pressure heating plants without the need for tall, unsightly, expensive stacks.

It permits operating at high efficiencies without regard to weather conditions.

Thorough and efficient combustion with high CO_2 content is assured. Smoke, gas and explosion hazards are reduced or eliminated.

L. J. Wing Mfg. Co. 66 Vreeland Mills Road, Linden, N. J.

Factories: Linden, N. J. and Montreal, Canada

WING

Wing DRAFT INDUCERS

January Homebuilding Highest for Month

PERMANENT NONFARM DWELLING units started in January totalled 87,000, according to preliminary estimates of the Labor Department's Bureau of Labor Statistics, 8% below the total for December but an all-time high for the month of January. The decline from December was attributed entirely to a drop in public housing, while privately owned new housing starts rose by 5%. Almost 84,000 units were begun by private builders in January, 8% over the previous high for the month set in 1950.

The Bureau explained that many builders still have a large backlog of commitments for housing that can be sold under pre-Regulation X credit terms. Also, the large volume of private housing started may be explained partly by considerable anticipatory building and buying in an effort to beat the March 1 deadline prohibiting the use of certain materials in civilian production and uneasiness about further material restrictions and more drastic credit curbs. The combination of the two is believed to have caused a number of prospective buyers to contract for homes sooner than they had anticipated.

Telegraphic reports of building permits issued during January, says the Bureau, indicates that housing starts for February also may be at an unseasonably high level.

ENGINEERED FOR YOUR JOB!
Time-Tested for Quality
S·O·S
FUSED QUARTZ BAFFLE
• QUICKLY INSTALLED •
• "SKIN-HEAT" IN SECONDS •
• STANDS-UP FOR YEARS •
SERVICE
K-26 ECONOMIZER CHAMBER
The World's Finest
COMBUSTION CHAMBERS
HARD BRICK OR K-26 INSULATING FIRE BRICK
Cast in revolutionary patented shapes that fit together instantly.
NO TOOLS, NO BANDS, NO CLIPS
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Makes round, square, rectangular, or pear shape to fit any boiler made.
UNCONDITIONALLY GUARANTEED
PACKED IN "BREAK-PRUF" CARTONS
Economizer 2600° F. "Fused Quartz" Hanging Baffle is available in 12", 14", 16", 18", 20" diameter sizes complete with Heat Resistant Hardware.
The K-26 Economizer 2600° F. Light Weight Insulating Combustion Chamber comes complete with castable floor.
FIRE KING hard brick chambers, and K-26 SPEED HEET light weight chambers, are unequalled for quality the world over.
FIRE KING or K-26 SPEED-HEET
S.O.S. PRODUCTS COMPANY, Inc.
282 - 284 Nassau Avenue, Brooklyn 22, New York
Manufacturers of 32 leading Chemical and Refractory products for the Plumbing and Heating Industry.

❖

U. S. Department of Labor Fueloil Prices (December)

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken December 15 (cents per gallon):

	Range	*No. 1*	*No. 2*	*No. 3*
Boston	14.73	14.57	12.50	..
Manchester	15.30	14.80	13.20	..
Portland, Me.	14.40	14.40	12.40	..
[3] Buffalo	14.95	..	13.74	13.74
[1] New York	..	..	12.63	..
Philadelphia	..	13.43	12.20	..
[1] Chicago	14.46	13.97	13.06	13.20
[4] Detroit	..	14.81	13.78	..
Milwaukee	..	14.66	13.72	13.58
[1] Kansas City	..	12.88	11.90	11.73
Minneapolis	14.97	14.73	13.68	13.73
[1] Baltimore	..	13.36	12.44	..
[1] Wash., D. C.	..	13.84	12.85	..
Jacksonville	..	14.67	13.72	..
Norfolk	..	13.60	12.20	12.20
Richmond	..	14.00	12.60	..
[2] Savannah	..	16.00	13.50	..
[5] New Orleans	..	14.33	12.77	12.77
Portland, Ore.	..	14.34	12.10	6.76
[6] San Francisco	..	13.87	11.54	6.76
[4] Seattle	..	15.41	13.20	6.84

[1] Prices include 2 percent tax.
[2] Inspection tax of one cent per gallon included on kerosene only.
[3] Prices include 1 percent tax.
[4] Prices include 3 percent tax.
[5] Prices include 3 percent tax on all fuels except gas; prices for kerosene and fueloil No. 1 also include one cent per gallon State health tax, and 1/32 of one cent per gallon State inspection tax.
[6] Prices include 3.5 percent tax on all fuels except gas.

❖

Kaufman heads Committee On oilburner Revisions

G. T. KAUFMAN, technical secretary, Oil-Heat Institute of America, Inc., heads a sub-committee of the Flammable Liquids Committee, National Fire Protection Association. This is the organization which prepares standards

Tripl-ife Flo-Warm Furnace

Gas Forced Air Flo-Warm Furnace

Oil De-luxe Flo-Warm Furnace

THE WILLIAMSON HEATER COMPANY

Complete Line

WARM AIR HEATING and WINTER AIR CONDITIONING

Tripl-ife Square Cased Gravity Furnace

"Heat to your heart's content"

Gas, Oil, or Coal—there is a Williamson Warm Air Furnace for any size installation. Beautifully styled, built for life-time service, and designed for fuel economy, the models shown represent 60 years of research—and dealer satisfaction. For greater sales, easier installations, more enthusiastic customers and bigger profits investigate the Williamson Complete Line. Write for details—

THE WILLIAMSON HEATER COMPANY
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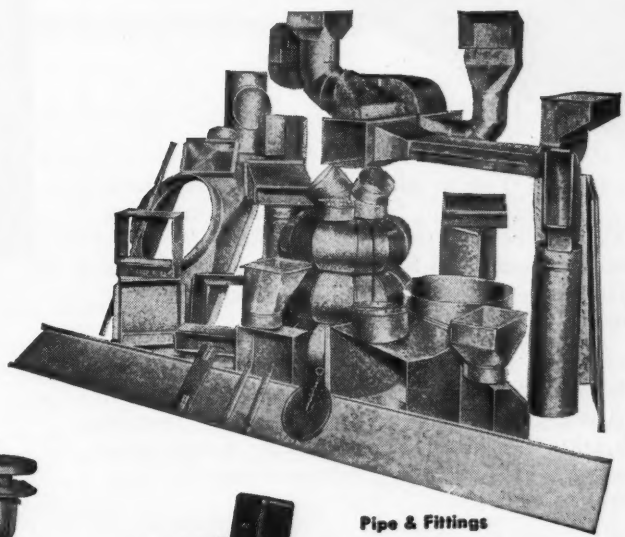
Cincinnati 9, Ohio

Tripl-ife Round Cased

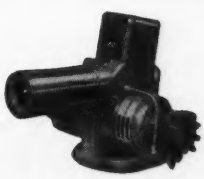
Gas Gravity Furnace



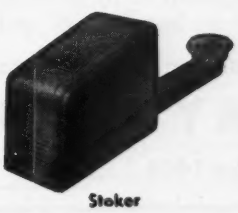
Pipe & Fittings

Oil Hi-Boy Furnace

Gas Burner



Oil Burner



Stoker

fuel oil heat

for the installation of oilburning equipment, issued by the National Board of Fire Underwriters as Pamphlet No. 31.

The sub-committee of which Mr. Kaufman is chairman is to consider revisions of these standards and present recommendations to the parent committee for approval. At the present time the sub-committee is considering three revisions:

1. An increase in the maximum quantity of oil storage capacity permitted inside buildings, without enclosure, in one or more tanks from the present 550 gals. to 1,000 gals. (Paragraph 9(c), Pamphlet 31.)

2. An increase in the maximum oil storage capacity of enclosed tanks in buildings of ordinary construction from 5,000 to 10,000 gals. (Paragraph 9(d), Pamphlet 31.)

3. Elimination of all restrictions on the location of fill and vent terminals relative to building openings. (Paragraph 14(c) and 15(a), Pamphlet 31.)

In addition, a request that consideration be given to the inclusion of a reference to signalling or limiting devices tending to prevent the development of abnormal pressure in the tank during filling has been turned over to the sub-committee for study.

Mr. Kaufman requests that suggestions for other changes be forwarded at once to him at the Institute, 6 East 39th St., New York.

Another sub-committee of the Flammable Liquids Committee has been set up, headed by Don F. Jones, Duo-Therm Div., Motor Wheel Corp., Lansing, Mich., to study revision of NBFU Pamphlet No. 310, "Standards for the Installation, Maintenance and Use of Small Heating and Cooking Appliances (Kerosene and Fuel Oil)." Suggestions for changes should be forwarded to Mr. Jones. Bear in mind, though, that Pamphlet No. 310 does not apply to perforated-sleeve type vaporizing burners, commonly called range burners. Standards for these are covered in Pamphlet No. 39.

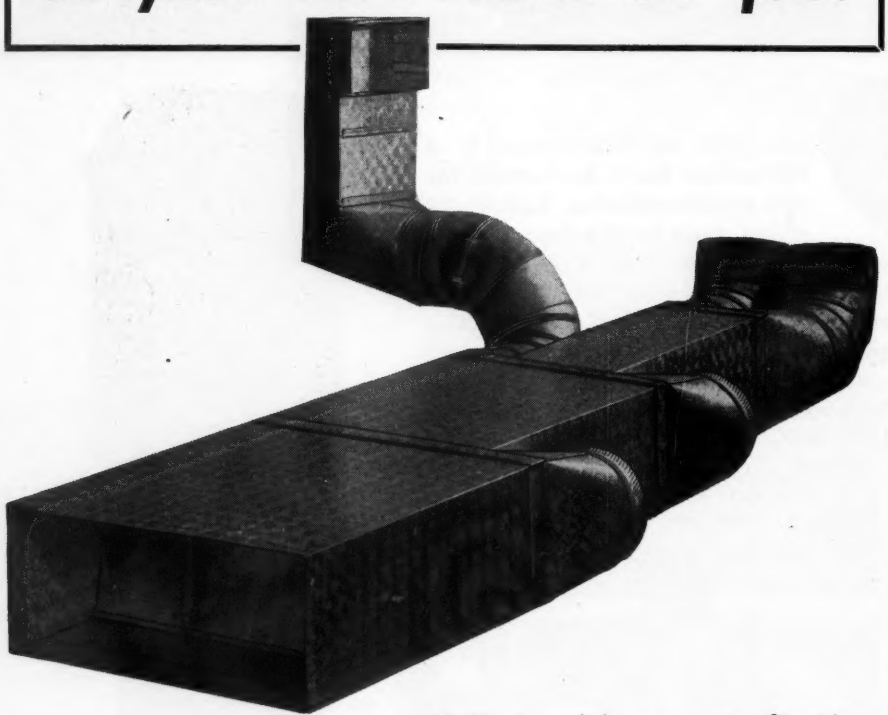
❖

D. S. Smith has been elected president and chairman of the board of directors, Perfection Stove Co., Cleveland, Ohio, succeeding *L. S. Chadwick* who has retired. The board also elected *George McCuskey* secretary and treasurer of the company. Mr. Chadwick, president and chairman of the board since 1922, during his 39 years with

Smith **McCuskey**

Perfection obtained scores of patents, largely in the cooking and heating fields. Mr. Smith, his successor, joined the company in 1910 as a clerk in the cost department. Successively advancing, he was elected vice-president and treasurer in 1949 and executive vice-president and treasurer the following year. Mr. McCuskey joined Perfection as assistant counsel in the Legal Department in 1944.

Keep ALL the Profits
on your next warm-air job!



● You're *giving away profits* whenever you "farm-out" the ductwork on your furnace installations. You can easily handle the complete job yourself with "Snap-Rite" prefabricated ducts and fittings. You don't need a sheet-metal shop or special equipment—the patented quick-locking feature of "Snap-Rite" ducts and fittings makes them easy to assemble.

Shown above is our most popular and simplified No. 160 line which consists of a square main trunk with round branch lines. This is accomplished through the use of our standard stock trunk pipe with "pre-notch" feature and our No. 160 round branch takeoff as illustrated, effecting a reduction in size of main trunk at each branch. This method produces a neat air-tight installation, low in cost and easy to balance.

Write for our catalog now and keep ALL the profits on your NEXT job!

GRAY METAL PRODUCTS, INC.

P. O. Box 1449 **Rochester, N. Y.**

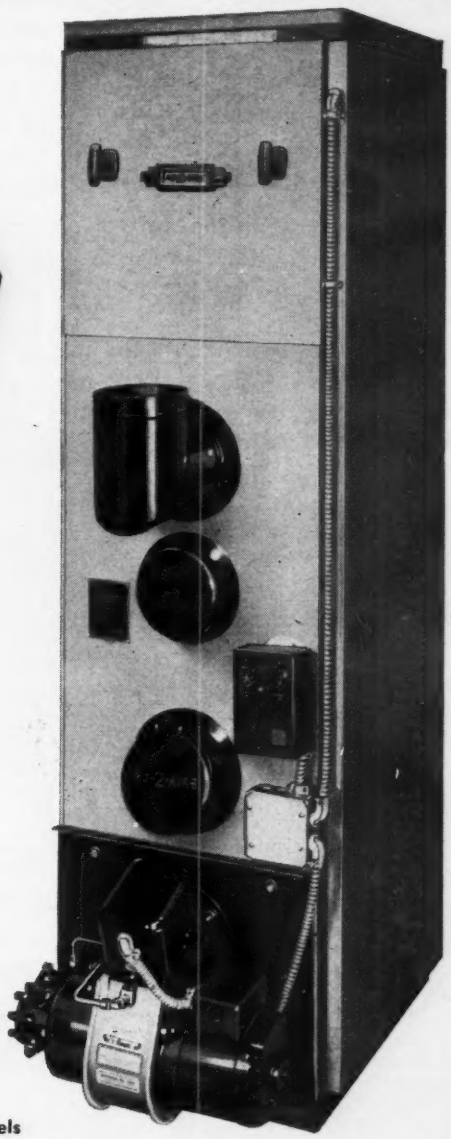
BUILT *Especially for* BASEMENTLESS HOMES

KO-Z-AIRE

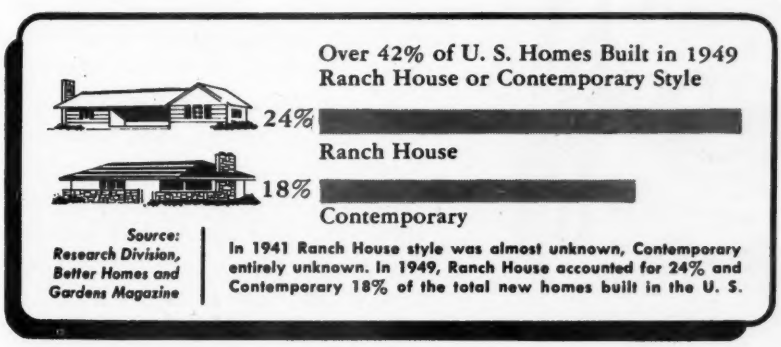
Advance Design

COUNTERFLOW

Sensational New *Reverse-Flow* Principle Meets Growing Demand for Perimeter Heating... Increases Your Sales



Models
70-CFG, 70-CFO
90-CFG, 90-CFO


Over 42% of U. S. Homes Built in 1949
Ranch House or Contemporary Style
24%
Ranch House
18%
Contemporary
Source:
Research Division,
Better Homes and
Gardens Magazine
In 1941 Ranch House style was almost unknown, Contemporary entirely unknown. In 1949, Ranch House accounted for 24% and Contemporary 18% of the total new homes built in the U. S.

New KO-Z-AIRE Advance Design Counterflow Units offer you unusual profit possibilities for making low cost installations in thousands of basementless homes where perimeter heating requires heat pipes located in or under concrete floor slabs.

Beautifully finished in Hammerloid enamel and compactly designed to fit even small closets, KO-Z-AIRE Counterflow Units are available in either gas or oil fired models. Shipped completely assembled and wired ready for immediate installation.

For complete information on new KO-Z-AIRE Counterflow Units and profit-potential of a KO-Z-AIRE franchise, write today or mail the coupon. No obligation. Distributor Inquiries Invited.

KO-Z-AIRE Incorporated
GENERAL OFFICES • RED OAK, IOWA
Representatives in Principal Cities

MAIL THIS COUPON TODAY!

KO-Z-AIRE, Incorporated Dept. FO-4, Red Oak, Iowa
Please send us your FREE KO-Z-AIRE Progressive Profit Program brochure at once or have your factory representative call.

NAME _____
TITLE _____
FIRM _____
CITY _____ STATE _____ K-50-7

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 18th.

Baltimore votes to Continue local Advertising

BY UNANIMOUS DECISION the board of directors of the Oil Heat Association of Maryland, Inc., Baltimore 1, Md., has voted to continue its local newspaper advertising campaign. It again will base contributions from the industry on the basis of fueloil gallonage delivered, using a formula of 1/20th of a cent per gallon for retailers and 1/40th of a cent for wholesalers.

During 1950 the Association built up a fund of about $52,000, of which more than $40,000 was spent for advertising purposes. As a preliminary step in determining the extent of this year's program, the Association is circularizing local companies, asking for estimates and pledges for the amounts they expect to contribute this year.

Pacemaker for Profits . . . from Expert Heating Service

Making the most of your ability to do an expert tune-up job will pay you big dividends in gaining you competitive leadership and neighborhood recognition of your competence as a heating expert. The combustion-testing kit shown here contains precision-made quality instruments with which you can make fullest use of your know-how in making a fuel conservation survey, checking a burner for wornout parts and needed repairs, or running an efficiency test to close a replacement deal.

The kit contains the well-known FYRITE CO_2 Indicator, the versatile MZF Draft Gauge, the all-metal TEMPOINT Stack Thermometer and the sensationally new TRUE-SPOT Smoke Tester. Now, for the first time you can adjust an oil burner quickly and expertly for highest CO_2 without objectionable smoke . . . do away with guesswork, and "hit and miss" fumbling in adjusting for clean firing. The "Scale of Soot" which comes with the TRUE-SPOT tells you the limits of permissible smoke for various burners and types of heating systems. This amazingly simple method of oil burner adjustment is the greatest advance in combustion testing since the introduction of the FYRITE CO_2 Indicator.

Ask your Jobber for the FYRITE Utility Kit or write for Bulletin 777

BACHARACH INDUSTRIAL INSTRUMENT CO.

7000 BENNETT STREET · PITTSBURGH 8, PA.

N. J. fueloil Distributors To convene at Asbury Park

THE THIRTEENTH annual convention of the Fuel Oil Distributors of New Jersey, Newark, is scheduled May 3 and 4 at the Hotel Berkey-Carteret, Asbury Park, N. J. It opens with a business meeting of the group, at which annual reports of officers will be rendered and trustees elected. Two speakers are to speak during this morning session: Kirk B. Shivell, oilheating marketing counsel, will speak on the subject, "Your future in oilheating," followed by Robert Gray, editor, FUELOIL & OIL HEAT, who will discuss "The outlook for oilheating."

L. R. Wellers, Jr. will be presiding officer at a luncheon that follows the morning meeting. He will introduce H. B. VanCleve, president, Maritime Petroleum Corp., who will talk about "The Oil Industry Information Committee" and Wiley Butler, president, Coastal Oil Co., will introduce Norman Brassler, Paterson Savings and Trust Co., who will speak on "Financing and Banking the Fueloil Dealer."

The program for May 4 follows the same general pattern, with a morning session and a luncheon meeting. During the morning a movie, "On your toes," prepared by the Oil Industry Information Committee, will be shown and W. W. Scheumann, manager of research and development company, Cities Service, will discuss the "Quality of fueloil today as compared to a few years ago."

Hon. Clifford P. Case, U. S. Congressman from New Jersey, and D. B. Hodges, directory, supply and transportation div., Petroleum Administration for Defense, are scheduled to speak at the luncheon session. Frank W. Lovejoy, Socony-Vacuum Oil Co., also is to appear.

Social events during the two-day meeting include the annual dance to be held on May 3.

OHI issues 1951 Booklet For annual service Business

A NEW 1951 SALES BOOKLET, "The Story of Aladdin," has been prepared

NOW! boost oil furnace sales in spite of duct metal shortage!

H.C. Little Oil-Fired Wall & Floor Furnaces do NOT need warm air ducts

YOUR CUSTOMERS will prefer these oil furnaces that provide whole-house heating and save money on installation costs!

YOU will make more oil furnace sales because you will not be restricted by lack of sheet metal!

Here are fully automatic oil-fired wall and floor furnaces specially designed for small home use! These self-contained units (absolutely no ducts needed) provide a highly efficient flow of warm air throughout the home. Installation is easier and quicker. Operation is entirely automatic—patented H. C. Little electric ignition system has no pilot light to waste fuel! No motors, no fans, no moving parts of any kind to break down or need servicing!

BURN LOW-COST FURNACE OILS!

H. C. Little oil-fired wall and floor furnaces burn ordinary low-cost furnace oils—operating at top efficiency—assuring a substantial savings in fuel costs!

LOW-TEMPERATURE CARBURETION PRINCIPLE!

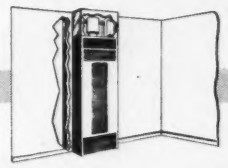
The patented H. C. Little oil burner in all H. C. Little furnaces operates on an exclusive LOW TEMPERATURE CARBURETION PRINCIPLE that *progessively* heats and vaporizes the fuel . . . prevents fuel "cracking" and therefore leaves no soot and no hard carbon deposits!

NO DUCTS NEEDED!
EASIER TO INSTALL!
SELF LIGHTING!
100% AUTOMATIC OPERATION

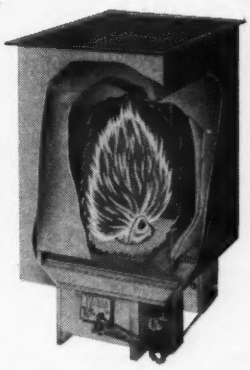
H.C. Little OIL WALL FURNACE

Ideal for houses without basement or built on concrete slab. Furnace is installed in partition wall and can be set flush to chimney flue. This installation method conserves floor space, permits wall-to-wall carpeting.

BTU PER HOUR HEAT OUTPUT 65,000

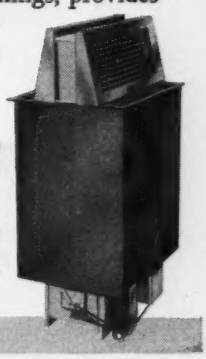


H.C. Little OIL FLOOR FURNACES



These automatic floor-flush oil furnaces provide uniform, whole-house heating without ducts! Large volume, warm air discharge through center of grille prevents drafts, assures well-distributed heat. Extra strong steel grille has narrow openings, provides safe walking surface, narrow heels will not enter. Absolutely silent operation!

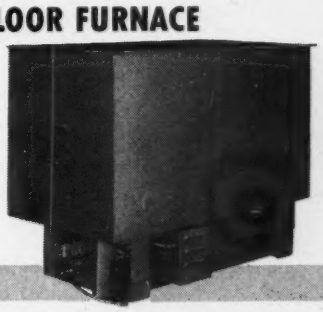
STANDARD REGISTER INSTALLATION—
Two sizes: 50,000 and 75,000 BTU PER HOUR HEAT OUTPUT.
DUAL WALL REGISTER INSTALLATION—
Two sizes: 55,000 and 80,000 BTU PER HOUR HEAT OUTPUT.



H.C. Little SHALLOW OIL FLOOR FURNACE

No need for basement or below-floor excavation! Specially made for homes where floor of house is unusually close to grade.

BTU PER HOUR HEAT OUTPUT 50,000



BOOST YOUR SALES VOLUME NOW WITH NO-DUCT H.C. Little OIL FURNACES

DEALER INQUIRIES INVITED
For full details about these amazing small-home oil furnaces write today to Dept. 4.

H. C. Little Burner Company
San Rafael, Calif.

Baltimore, Md.
Belmont, Mass.
Boise, Idaho
Chicago, Ill.
Columbus, Ga.
Detroit Lakes, Minn.
Fayetteville, N. Car.
Newark, N.J.
Portland, Ore.
Prescott, Ariz.
Reno, Nev.
St. Louis, Mo.
St. Petersburg, Fla.
Salt Lake City, Utah
Seattle, Wash.

OT*
SERVICEMAN SAYS —

"One look and I can tell whether the unit is arranged for one pipe or two pipe system!

"There's nothing like engineering a product for the convenience of a serviceman. Here's an example of what I mean—Webster Electric Fuel Units are so marked that I can take one look and I know if it is arranged for a one-pipe or two-pipe system. Not guess work. There it is—you know where you stand at a glance. That's why I specify Webster Electric. I feel their units have been designed with me in mind. Try them—you'll see what I mean."

*Old Timer

An identical unit is made for sale in Canada by Canadian Acme Screw & Gear, Ltd. of Toronto, under license by Webster Electric Company, Racine, Wis. Established 1909.

WEBSTER ELECTRIC
RACINE • WISCONSIN

"Where Quality is a Responsibility and Fair Dealing an Obligation"

by Oil-Heat Institute of America, New York 16, N. Y., for members of its Distribution Division. Designed to be used by a dealer in his campaigns to obtain annual oilburner service contract business, the booklet summarizes the story of Aladdin, his magic lamp and the faithful genie. From the happy ending of this tale, the booklet draws the moral, "Take care of your faithful servant—your oilburner—it pays off."

Carrying out the analogy, the customer to whom a dealer gives or mails the booklet, then is told, "Your telephone is a modern magic lamp—calling our number will bring a modern Genie—an expert oilburner serviceman whose modern 'miracles' will assure your comfort next winter. Go through this booklet—and call us for Annual Service."

Text of the booklet, which reproduces a good-sized, pertinent illustration on every page, briefly reviews the importance of regular and proper servicing of the oilburner controls, lubrication and adjustment, nozzle and strainer and thermostat.

Copies of the booklet may be obtained by Distribution Division members from Institute headquarters at nominal charges. The entire back cover is reserved for dealer imprinting, with a 4-line imprint included in regular prices, and additional copy billed at a flat price per line.

Oil Groups oppose parts Of Trade Agreements Act

HARRY B. HILTS, secretary of the Atlantic Coast Oil Conference and Empire State Petroleum Association, New York 17, N. Y., represented both organizations in going on record before the Senate Finance Committee to oppose certain provisions of the proposed Trade Agreements Act of 1951 (H.R. 1612). Maintaining that the escape clause and peril point findings amendments as proposed "would impose severe restrictions on the importation of vitally needed petroleum," Mr. Hilts pointed out that as distributors, the members of both organizations "have no preference as to where our supply originates."

Specifically, the East Coast associations objected to the possibility of a re-

striction of oil imports under the peril point findings amendment if imports were found to be injuring an industry producing "like or directly competitive products." Instead, Mr. Hilts suggested the substitution of "like or similarly competitive articles."

Also, he registered opposition to the clause which would permit "any segment of the industry" to institute proceedings to increase the oil tariff on the grounds it was hurting that segment's business. This, he regarded as "an open invitation to the inefficient producers to blame everything on the tariff, no matter what the reasons for their inability to meet competition."

Mr. Hilts concluded with the observation that the restrictions would affect the amount of petroleum available to the military services and civilian customers and would penalize, also, those countries from which we import petroleum.

Ellis speaks at Meeting Of Washington Dealers

THE REGULAR monthly luncheon meeting of the Oil-Heat Institute of Greater Washington, Washington, D. C., was held March 20 at the DuPont Plaza Hotel. It featured as a speaker Otis Homer Ellis, Washington representative of the National Oil Jobbers Council. A nationally recognized authority on jobbers' problems, Mr. Ellis discussed them in relation to taxation, margins and competitive situations.

Conviser honored as NYOHA past President

A TESTIMONIAL DINNER was held on April 16 by New York Oil Heating Association, Inc., Long Island City 1, N. Y., honoring Matthew Conviser, past president. The event took place at the Tavern-on-the-Green, Central Park, New York City, featuring an old-fashioned beefsteak dinner, preceded by a half hour of "Fellowship time."

The committee, consisting of Phil Mitchell, Tom Hickey, Joe Ross and Dan Bierman, chairman, arranged for a Tom O'Connell show to entertain the members and their guests, who were invited. Price of admission included beer and a white apron and hat for all.

OT* SERVICEMAN SAYS—

"Ample outlets—

I can bring my wires in conveniently!

"It's sure grand not to have to worry about bringing wires into a Webster Electric transformer. I know from the start that I can handle practically any type of condition, so I don't worry about it—I just specify Webster Electric transformers. Here's another thing—The opening is large enough so that I can easily reach in and make all my connections without being in cramped quarters. Try them—you'll never use any other."

*Old Timer

Webster Electric Company, Racine, Wisconsin, Established 1909.

WEBSTER ELECTRIC

RACINE • WISCONSIN

"Where Quality is a Responsibility and Fair Dealing an Obligation"

Washington OHI plans Servicemen's Clinic

A SERVICEMEN'S CLINIC was voted by the board of directors, Oil-Heat Institute of Greater Washington, Washington, D. C., at its February 27 meeting. The Clinic began on April 9 and each member of the Institute was invited to send half of his servicemen for one week, from 9:00 A.M. to 4:00 P.M. each day, with the other half slated to attend the second week when the program was repeated.

Factory men conducted classes on such subjects, as pumps, relays, controls, instruments, service methods, new equipment, hot water hook-ups, combustion chambers, low pressure, rotary and high pressure oilburners.

Wisconsin Association Exhibits at Home Show

THE EXHIBIT, sponsored by the Wisconsin Oil-Heat Association, Inc., Milwaukee 2, Wis., at the Home Show, held in the Milwaukee Auditorium, March 10 through 17, was located in booth No. 26, the same location it has occupied for the past several years.

On the side walls of the booth were listed the names of all members, separated into oilburner sales and service, fueloil companies and suppliers and maintenance groups. Harry Bringolf, chairman of the Home Show Committee, supervised assignment of members to man the booth throughout the time the exhibit was open.

Government Officials to Address NPA Meeting

THE SPEAKERS PROGRAM announced for the meeting of the National Petroleum Association, Washington, D. C., to be held in Cleveland on April 19 and 20, includes several Government officials directly concerned with matters pertaining to the oil industry.

Bruce K. Brown, deputy administrator, Petroleum Administration for Defense, Orville Judd, oil price chief, Office of Price Stabilization, Selective Service Chief Lewis B. Hersey and PAD Transportation Director Hodges all are scheduled to appear.

Association Committee Develops new short Form

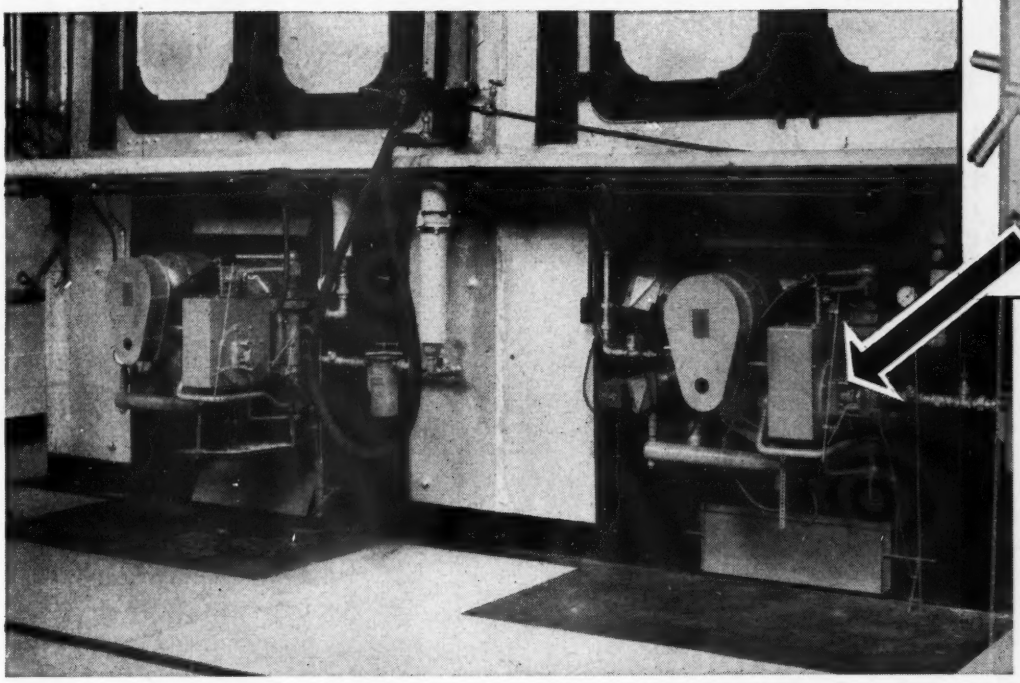
"FORM 6—Job estimate form for warm air heating systems" has been developed by the Installation Codes Committee, National Warm Air Heating and Air Conditioning Association, Cleveland 14, Ohio. The new short form is based directly on the accepted design and installation manuals published by the Association and will permit simpler, shorter and quicker determination of the heating requirements of a building for estimating purposes.

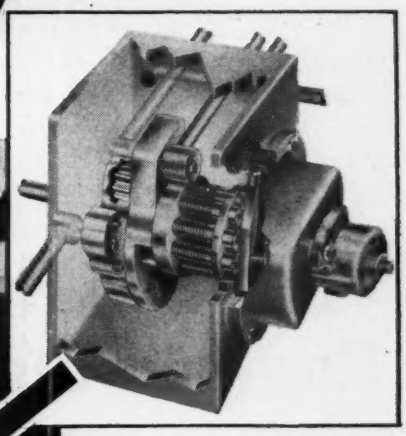
The form simplifies figuring by considering the heat loss from a home, for example, as a whole instead of finding heating requirements room by room. The number of warm air outlets required then is obtained by dividing the total heat loss of the house by the average Btu per hour delivery desired for each outlet. The factor 8000 Btu per hour has been used in Form 6, representing the preference of most dealers.

Three tables are included for use in determining return air requirements for gravity and winter air conditioning

Fulflo FILTERS
REG. U.S. PAT. OFF.
FULFLO FILTERS
Fulflo FILTER
MODEL F84
UL
IT WILL PAY YOU!
New Burner Installations are not the only place you can profit by FULFLO Filters.
● HONEYCOMB FILTER TUBES give true depth filtration . . . every drop of oil filtered again and again to microscopic clarity. Prevent fouled points, clogged nozzles, scored pumps, stuck valves and all service troubles arising from minute impurities in heating oils.
● If any of the older installations under your care do not have a FULFLO Filter it will pay you to see that one is installed.
● FULFLO Filters lead all others in sales because they lead in performance . . . because dealers everywhere have found them the most effective in eliminating costly service calls.
RF4 REFILL HONEYCOMB TUBE
Six in a counter carton with gaskets and instructions. Fits all 4-inch FULFLO Filters. Stocked by more jobbers and dealers than any other oil burner filter refill.
IF YOUR JOBBER CAN'T SUPPLY YOU WRITE OR WIRE US
COMMERCIAL FILTERS CORPORATION
BOSTON 27, MASSACHUSETTS

The Modern way to fire heavy oil





Iron Fireman Oil Volumeter *feeds oil in uniform volume regardless of viscosity*

The Iron Fireman Oil Volumeter is a variable volume pump which is completely submerged in the oil reservoir. Multiple pistons operating in a rotating cylinder-block pump the oil to the rotary cup nozzle under *low pressure*. Volume of oil delivered is regulated *accurately* by the length of the piston stroke, which is easily controlled either by automatic control systems or by manual adjustment. Oil feed rate stays within ½ of 1% of setting, regardless of changes in oil viscosity.

Iron Fireman Rotary Oil Burner

fires heavy fuel oils with steady, uniform flame

The Iron Fireman Horizontal Rotary oil burner handles all grades of oil—from lightest to heaviest—with accuracy and precision. The Oil Volumeter meters the oil to the nozzle by *volume*—not by the old-fashioned methods of viscosity compensating valves or adjustable ports. This precision feed results in a steady, uniform flame, even when throttled down to less then 20% of capacity. Dependable oil flow results in thorough reliability even when starting up in a cold boiler.

The heavy fuel oils (Nos. 5 and 6) are lower priced than the ordinary burner oils, yet they may contain up to 12% more Btu's per gallon as compared with lighter oils. Thus, with the precision firing of these heavy oils you save in two ways—in the cost per gallon and the amount of heat obtained per gallon.

For further information write for new 16-page booklet, "The Iron Fireman Horizontal Rotary Oil Burner." Address Iron Fireman Manufacturing Co., 3186 West 106th Street, Cleveland 11, Ohio. Other plants in Portland, Oregon; Toronto, Ontario, Dealers everywhere.

Most complete oil burner franchise in the entire field!

1. The unique features and outstanding fuel economy that are built into Iron Fireman oil burning equipment make it easy to sell.

2. The Iron Fireman trademark, with 26 years of continuous national advertising and user satisfaction behind it, gives all Iron Fireman equipment exceptional salability.

3. Iron Fireman has a complete line of residential, commercial and industrial oil burning equipment.

4. Iron Fireman has a full line of firing equipment for all fuels.

5. Iron Fireman dealers receive strong company backing which includes local advertising, merchandising, sales training and engineering assistance.

THE IRON FIREMAN

TRADE MARK REG. U. S. PAT. OFF.

Excellent territories available in our expanding dealer organization.
WRITE TODAY for full information!

IRON FIREMAN

AUTOMATIC FIRING EQUIPMENT FOR OIL, GAS, COAL

systems and for perimeter warm air heating. On page 1 there is space for indicating all information about the job, including insulation, storm windows, weatherstripping, and on page 4 a complete tabulation can be made of all costs figured in the estimate, including special controls, carpentry, masonry, drayage, mileage and even time necessary to clean up after the job is completed, plus cost of free service plan.

Quantities of Form 6 can be secured for $6.00 a hundred, or minimum quantities of 50 for $3.00, from Association headquarters at 145 Public Square, Cleveland.

Upper Midwest Oil Men's Club organized

ON FEBRUARY 26 an organizational meeting was held at the Radisson Hotel, Minneapolis, at which articles of incorporation were approved for an Upper Midwest Oil Men's Club, replacing the former Northwest Oil Men's Club. The change in name was accomplished to avoid confusion with the Northwest Petroleum Association, and to insure the identity of the Oil Men's Club as a separate organization.

Frank J. Schiefelbein, Midwest Oil Co., was named first president of the Club, with R. T. Seidel, Shell Oil Co., elected vice-president and J. J. Manning, Wayne Pump Co., treasurer. In addition to these three, the following also were elected to the board of directors: Tom Gemlo, Fred Plane, Clarence Johnson, Doppy Distel, Chick Arnold and Edwin H. Kopplin. H. F. Horning was designated secretary.

Mr. Plane was appointed chairman of the Program Committee, along with Forrest Ellsworth, Claude Ray, Dick Coffin and Andy Oleston. First event arranged was a "House Warming" party on April 13, open to all oil men in the area.

Announce additional Schools of Modern Heating

DATES and locations for I-B-R Schools of Modern Heating until the middle of July have been announced by the Institute of Boiler and Radiator Manufacturers. They are to be held in Chicago, April 10 to 12; Ames, Ia., April 17 to 19; Evansville, Ind., April 24 to 26; Cincinnati, May 8 to 10; Columbus, May 15 to 17; Cleveland, May 22 to 24; Pittsburgh, June 5 to 7; Detroit, June 12 to 14; Buffalo, June 19 to 21; Syracuse, N. Y., June 26 to 28; Albany, July 10 to 12 and Elmira, N. Y., July 17 to 19.

Students wishing to enroll in the schools may obtain full information from the Institute at 60 East 42d St., New York 17, N. Y.

Officers named by Propeller Fan Group

AT THE ANNUAL MEETING of the Propeller Fan Manufacturers' Association, Detroit, Mich., held at Daytona Beach, Fla. on March 2, officers for 1951 were elected. Parker T. Finch, Hunter Fan and Ventilating Co., was named president; B. G. Krause, Air Controls, Inc., was appointed vice-president. L. O. Monroe, secretary-treasurer.

The Association is presently sponsoring Commercial Standards for testing and installation, to further its program for high industry standards.

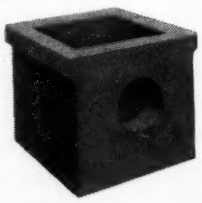
HERE'S how KOLB Engineering Helped . . .

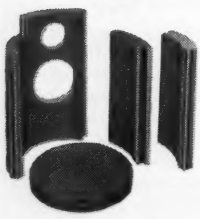
WATERFILM BOILERS
Jersey City 7, N. J.

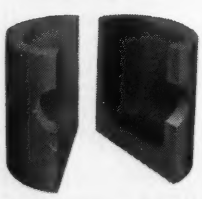
Dear Mr. Kolb:
The Kolb Kast chambers were carefully chosen as a component part of the Venko quality packaged unit because of the excellent combustion results obtained from their use.

Very truly yours,
WATERFILM BOILERS, INC.

A. R. Hanson







HERE'S how we can help YOU too:

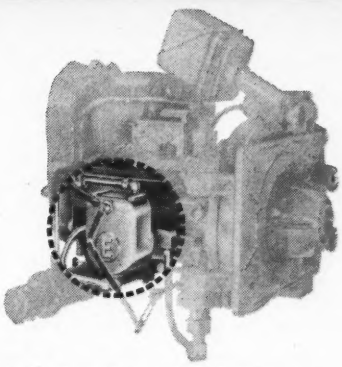
Give us your toughest combustion chamber problem. Our engineers will show you how we can solve it. *Write today to* —

KOLB REFRACTORIES COMPANY
Meadow & Jackson Sts.
Philadelphia, Penna.

KolbKast Shapes • KolbKast Insulated Shapes

. . . . . in the Spotlight

for Lower Fuel Costs, Higher Burner Efficiency

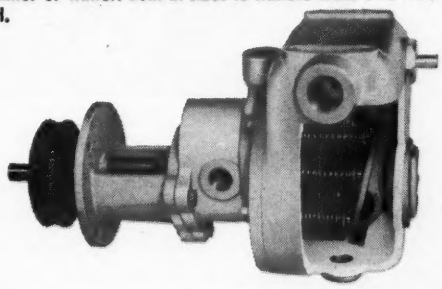


Easily Installed on Enterprise Burners

The P-D Metering Pump is designed for use only on Enterprise pump-type oil and gas-oil burners, to provide a constant, accurate fuel supply.

Dual Pump Construction

Consisting of a primary and secondary pump and reservoir, with by-pass for air, the P-D Pump provides exact metering of oil—light or heavy, hot or cold, clean or dirty, in summer or winter. Built in sizes to handle from 0 to 100 G.P.H.



ENTERPRISE P·D* METERING PUMP

First developed and perfected for oil burner operation by Enterprise, the positive displacement type metering pump provides *exact* delivery of the *proper* quantity of oil at a *constant* rate—regardless of changes in temperature and viscosity. More than six years experience in practical application has brought refinements in design and construction that make this the most efficient and accurate metering device of its type. Servicing requirements are kept to a minimum: there are no ports to clog, no adjustments to make, no relief valves, compensating valves or pressure gauges. Operating in a completely sealed oil bath, the P-D Metering Pump remains virtually free of wear through years of continuous operation. The precision oil delivery provided by this versatile pump assures a constant burner firing rate; cleaner, more efficient combustion, with a resultant savings in fuel consumption. Full information is contained in Bulletin No. 51, available on request.

* { Positive Displacement
{ Precision Delivery of Oil

ENTERPRISE ENGINE & MACHINERY CO.
A Subsidiary of General Metals Corporation
18th & Florida Sts., San Francisco 10, California

Enterprise Oil Burners

Warm Air Group sends Booklet to Dealers

A BOOKLET, prepared by the National Warm Air Heating and Air Conditioning Association, Cleveland 14, Ohio, entitled "All 85 working for you," is intended for circularization of prospective dealer members. It begins with a brief review of the objectives of the Association and a resume of its activities.

The 85 people referred to in the title represent the group's headquarters staff, officers and members of committees working on research, education, publicity and in liaison with governmental agencies.

Each of the committees supervising Association activities is pictured in session and its function explained, with the center spread of the booklet devoted to the Association's research program. It depicts activities within the laboratory at the University of Illinois, shows a recording panel used in experiments and has pictures of the three research residences in which tests are being made. The mobile home heating test laboratory recently outfitted also appears.

Concluding pages describe the warm air manuals and Indoor Comfort Conferences, integral parts of the educational program, and discuss the publicity program, aimed at both consumer and trade magazines.

❖

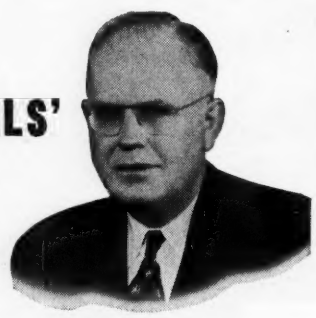
Ruth I. Shafer, one of the two women members of the American Society of Heating & Ventilating Engineers, has been named eastern division manager, Overhead Heaters, Inc., Detroit, Mich., makers of Shafconaire, horizontal oilfired heater. Miss Shafer has been in the heating equipment business for 10 years in New York and formerly had been an officer and director of Paco Products and Bossi Co., distributors and jobbers for heating equipment and controls.

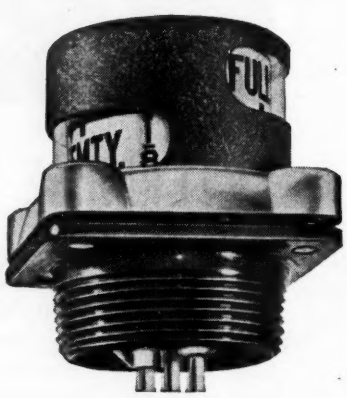
Fred Potter and *Ralph E. Rawles* have been named regional managers for Norge Heat Div., Borg-Warner Corp., Detroit, Mich. Mr. Potter's experience in the heating field includes associations with Holland Furnace Co.,

Potter Rawles

managing its Pittsfield, Mass. branch from 1930 to 1932 and subsequently with Kalamazoo Stove & Furnace Co. His territory will embrace Kansas, Missouri, southern Illinois, Oklahoma, Texas, Arkansas, Louisiana and Mississippi. Mr. Rawles previously was southern manager for the Stoker and Heating Div., Fairbanks-Morse & Co. and has had experience in domestic heating dating back to 1926.

Rochester 'DUAL-DIALS' MEAN EXTRA PROFIT!"





"We've stocked and sold Rochester 'Dual-Dial' Gauges for many years . . . because we know that the majority of our dealers prefer them. 'Dual Dials' eliminate service calls caused by faulty gauges—this means extra profits—records prove it. They assure the kind of customer satisfaction that helps build our business, too."

Jerry Crawford

JERRY Y. CRAWFORD, Owner
Crawford Plumbing & Heating Supply,
Chicago, Illinois

ROCHESTER "DUAL-DIAL" OIL TANK GAUGES are preferred by dealers and wholesalers the country over because of their positive leak-proof feature and long-term dependability. These men have found through experience that the Rochester "Dual-Dial" is the *one gauge* they can install with complete confidence. They know it will not cause trouble through faulty operation or fume leakage, even under pressure.

Rochester "Dual-Dial" Gauges are ruggedly built with permanent magnetic indication. They have been Underwriters' listed for more than 25 years. Stocked by leading wholesalers for basement oil burner storage tanks in the following depths—22", 24", 26", 27", 42", 44", and 47"; 1½" and 2" pipe thread connections. Special lengths to order . . . STOCK UP NOW. Rochester Manufacturing Co., Inc., 8 Rockwood St., Rochester 10, N. Y.

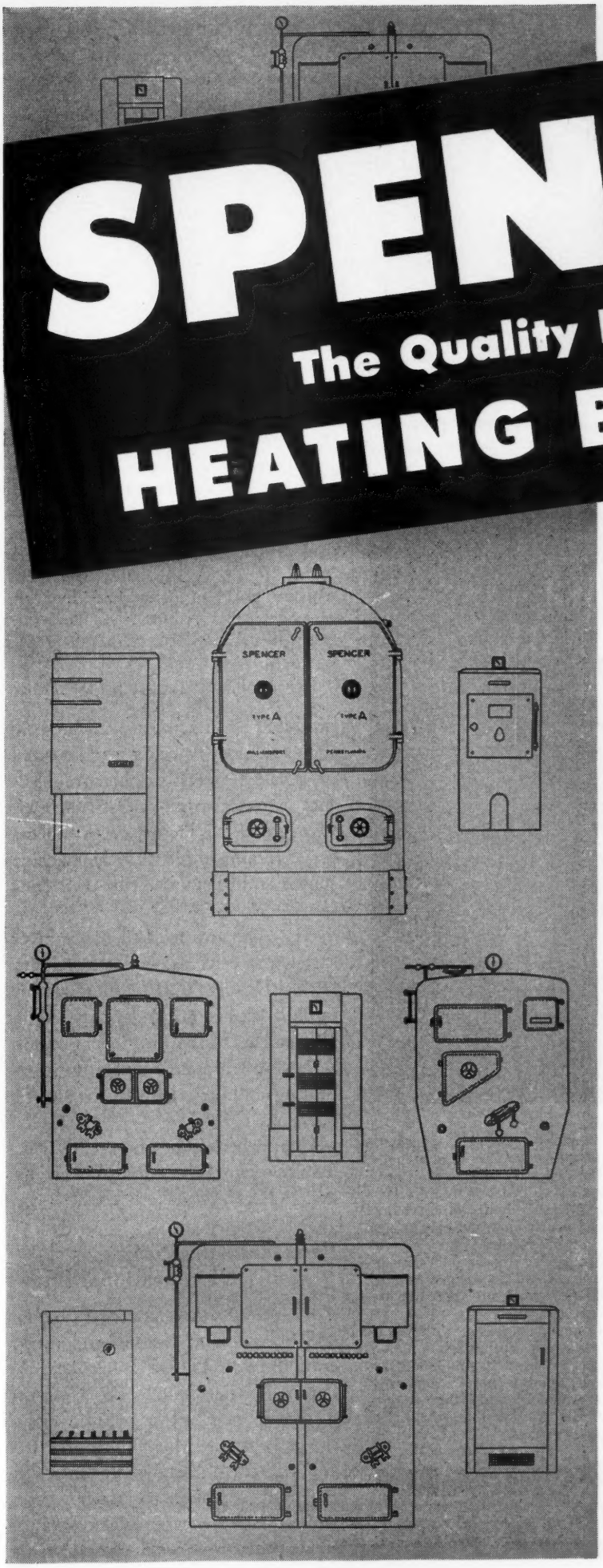
OHI

ROCHESTER
MANUFACTURING COMPANY, INC.
DIAL THERMOMETERS GAUGES AMMETERS

ROCHESTER DEPENDABLE ACCURACY GAUGES

SPENCER

The Quality Line of HEATING BOILERS



VERSATILE
DEPENDABLE . . .

Backed by more than 60 years' leadership

There is a SPENCER for every building . . . for every fuel, with capacities from 290 to 45,000 square feet, steam. Precision engineered and manufactured to give superior, guaranteed service.

SPENCER
HEATER
LYCOMING-SPENCER DIVISION
WILLIAMSPORT AVCO PENNSYLVANIA

SBI

H

I B R

Constructed in accordance with ASME requirements. Fully approved by Steel Boiler Institute or Institute of Boiler and Radiator Manufacturers.

fuelfoil oilheat

Manufacturers Activities

Fitzgibbons Booklet marks Sixty-fifth Anniversary

AN 8-PAGE BOOKLET, prepared by Fitzgibbons Boiler Co., Inc., New York 17, N. Y., has been issued to commemorate the company's 65th Anniversary. The brochure traces the history of the company from its earliest days and keynotes its contributions. By way of contrast, it also presents a picture of the company today, its full line of steel boilers for domestic heating, commercial and industrial applications and its modern plant and up-to-date facilities.

Opening pages contain a spread of pictures, showing the original boilers produced by Fitzgibbons and progressing to the models being made currently. Equally interesting photographs depict manufacturing operations in the Oswego, N. Y., factory, with explanatory captions to identify the machines shown and briefly describe their functions.

Homer Addams, *chairman of the board, Fitzgibbons Boiler Co., Inc., New York, N. Y., cuts a birthday cake at a recent celebration of the company's 65th Anniversary. Others in the picture are, left: James F. Swartz, secretary; Ray C. Malvin, vice-president and general plant manager. At right: Paul K. Addams, president; Gustav E. Olson, vice-president and manager, metropolitan New York sales and John R. Collette, manager of field sales.*

The company marked the anniversary with a celebration in its booth during the Heating and Ventilating Show in Philadelphia during January. About 60 members of the Fitzgibbons organization and prominent persons in the heating industry helped observe the occasion.

Copies of the brochure, "FO-86," may be secured by writing Fitzgibbons at 101 Park Ave., New York.

Penn starts new Series Of educational Shows

CONTROL MEETINGS, covering function and operation of heating and refrigeration controls, are being held by Penn Electric Switch Co., Goshen, Ind. The new series of educational shows began in Memphis on April 9 and will travel throughout the southern and southeastern states. Penn, which has pioneered demonstration shows of this type for the past 15 years,

Petroleum haulers have long wanted an air-operated emergency valve. Here it is—and every bit as fine as all the other Philadelphia Valve products, which have served the industry for so many years.

This is a compact elbow-type valve, made in both 3" and 4" sizes. There's nothing to rust or get out of kilter. There's no stuffing box to be repacked or tightened. You can mount the valve on any tank truck equipped with air brakes; it will never interfere with normal brake operation. Air cylinder can be removed as a unit. Compact control mechanism can be conveniently located at side or rear of truck. Finger-tip operation gives instant, full flow.

The bonnet and piston assembly can be removed, in a matter of minutes, with the use of an extractor wrench which is operated through the manhole cover. This type of bonnet eliminates the necessity of steaming and getting into the tank in order to replace the disc. It saves many costly hours of servicing time! (Our mechanically-operated emergency valves also provide this feature.)

Two types: Multiple (any single valve or combination of valves can be opened at one time); Massachusetts (only one valve can be opened at one time).

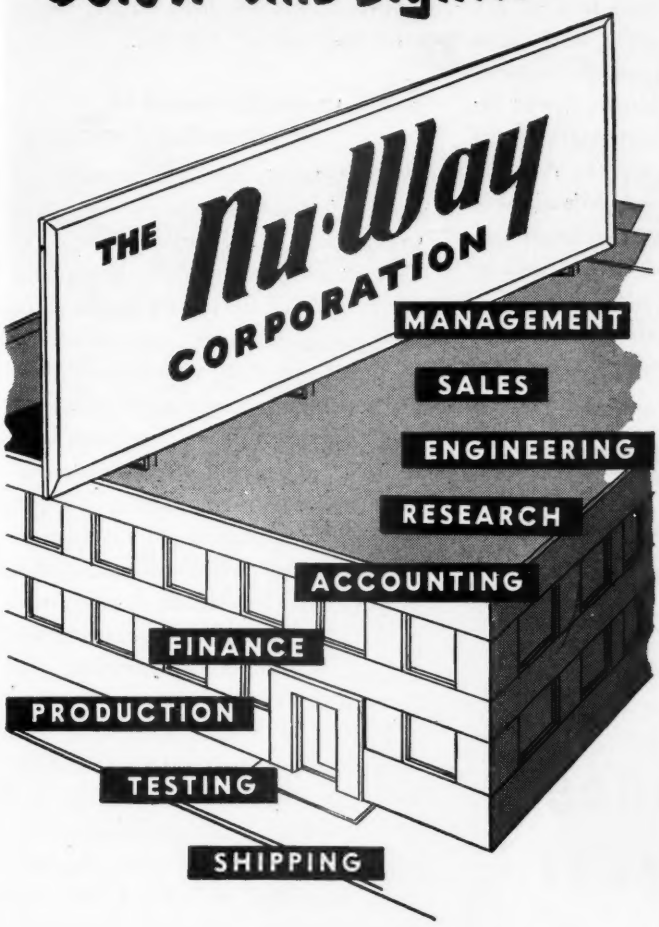
This valve is one more reason why you'll want to *standardize* on Philadelphia Valve Company equipment—first in the industry for economy, fast unloading, safety, long life, trouble-free performance. Send for catalog 170 for description of the full line, illustrated with engineering drawings.

PHILADELPHIA VALVE COMPANY

3413 ARAMINGO AVENUE, PHILADELPHIA 34, PA.

PACIFIC COAST DISTRIBUTORS • Oil Marketing Equipment Co., 325 Fremont Street, San Francisco 5, California
Howard Supply Co., 5125 Santa Fe Avenue, Los Angeles 11, California

Below this sign...



It takes a lot more than high sounding titles for departments to carry on the job of producing Nu-Way Oil Burners. It takes competent people from the department head on down working in close cooperation to build and market a quality product. That these jobs are being well done is amply proved by the continued increase in the number of homes depending on Nu-Way Oil Burners for automatic heat.

THE
Nu-Way
CORPORATION
ROCK ISLAND, ILLINOIS

OIL HEATING EQUIPMENT

Sold Through Jobbers and Distributors
Also Special Application for Furnace and Boiler Manufacturers

"Automatic Oil Heat Exclusively Since 1921"

fuel for oil heat

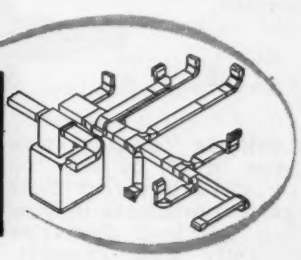
Lamneck invites comparison

the best costs less...

The price quoted in this ad is net to the dealer at the jobbers warehouse. Sixty inch lengths of 700 Wall Stack is shipped five lengths to the carton and comes in ten half sections which can be cut to any desired length without wastage, and which slip together quickly and easily. Each length is complete with Lamneck's patented "snap lock connectors," which form a snug air-tight connection without the necessity for notching corners. Yes, we invite comparison in price, design and quality.

LAMNECK MAKES A COMPLETE LINE OF FURNACE PIPE & FITTINGS

Simplenic SYSTEM
T.M.
Lamneck
FURNACE PIPE & FITTINGS



Another Great C&L Product

Write for free comprehensive Lamneck Catalog and the industry's latest book "Standardized Fittings."

ADI STANDARDIZED FITTINGS

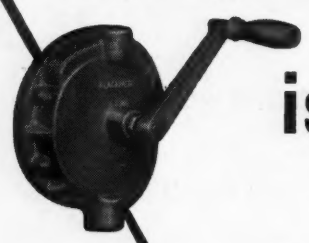
CLAYTON & LAMBERT MFG. CO.
Louisville 10, Kentucky

patterned these after previous ones, adding latest information and service helps.

Meetings, which feature dramatic visual demonstrations in the use, construction, installation and servicing of automatic controls, are arranged and sponsored in each city by local jobbers. Included in the elaborate equipment, assembled for the most complete coverage of the subject possible in one evening, are giant controls which actually operate, colored slides and charts. After the regular session individual installation problems are discussed.

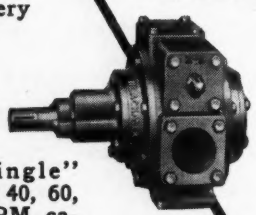
The following Heating Control shows already have been held or are scheduled for the cities and dates shown: Memphis, April 9; Jackson, April 12; New Orleans, April 16; Mobile, April 19; Montgomery, April 23; Birmingham, April 26; Atlanta, April 30; Macon, May 3; Miami, May 9; Jacksonville, May 14; Savannah, May 17; Charleston, May 21; Columbia, May 24; Raleigh, May 28; Greensboro, May 31; Charlotte, June 4; Asheville, June 7; Knoxville, June 11; Chattanooga, June 14; Nashville, June 18; Louisville, June 20. Refrigeration shows are held on the nights after the heating sessions.

IN HAND PUMPS...
AS IN TRUCK PUMPS
BLACKMER *leadership*
is Performance PROVED!



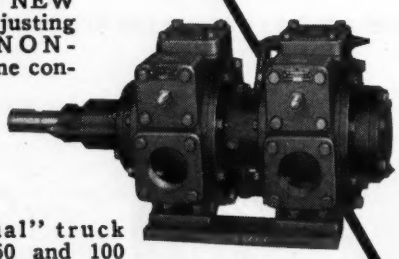
Blackmer offers the world's largest line of time-tested, dependable hand pumps of finest quality for every requirement.

FOR MORE THAN 45 YEARS Blackmer Pumps have been most consistently favored by "oil men." With minimum care, Blackmer Pumps outlast all equipment with which they are used. You can get no better pumps than Blackmers for your petroleum-handling needs.



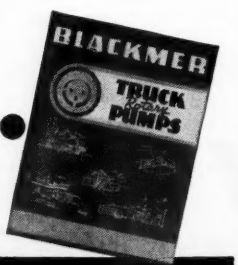
Blackmer "single" truck pumps in 40, 60, 100 and 200 GPM capacities feature NEW QUIET "self-adjusting for wear" NON-METALLIC vane construction.

BLACKMER PUMPS lead all others in design improvements in truck pumps. With Blackmer Pumps oil marketers invariably gain profitable delivery time and lower operating costs, thereby increasing profits.



Blackmer "dual" truck pumps in 40, 60 and 100 "twin" capacities meet legal requirements in handling "split load" deliveries efficiently from compartmented trucks. Contamination of products is entirely eliminated.

WRITE FOR TP3 BULLETIN CONTAINING DETAILS OF BLACKMER TRUCK PUMPS



BLACKMER PUMP COMPANY GRAND RAPIDS, MICHIGAN

G-E Campaign Aimed at "Pickpocket Furnaces"

TWENTY-THREE MILLION homeowners have "pickpocket furnaces" according to estimates of General Electric's Air Conditioning Department, Bloomfield, N. J., and its 1951 sales emphasis on its automatic heating equipment will be aimed at getting as much of this replacement market as possible. The company has met with its distributors and dealers and presented a complete program with major emphasis on converting hand fired heating plants, old automatic heating systems and space heated homes. This modernization program is backed with complete advertising and promotional materials, including sales training for dealers' men.

Jarred by figures indicating that 70% of all homeowners have outdated heating systems and that 75% of total heating sales of all heating manufacturers are for replacement, the company examined its own figures and found that 78% of its heating sales in the last three years have been for modernization. In 1950 the company sold five times as many furnace and boiler units for replacement as for new construction, in spite of a record volume of building during the year.

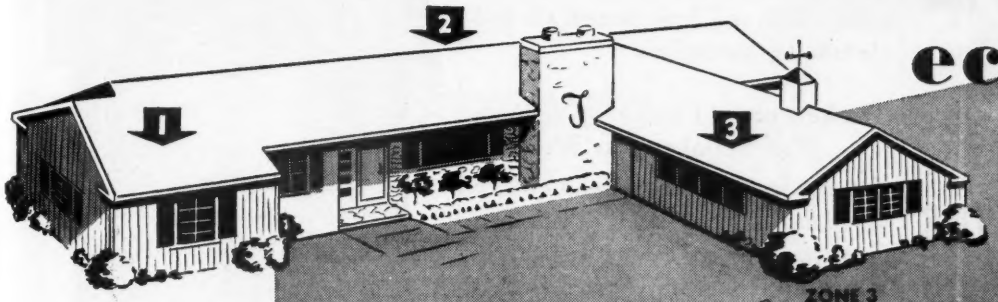
Sales ammunition offered to dealers to attack the replacement market includes national advertising, local advertising, direct mail, radio, outdoor and car cards. A complete package of promotional material is offered to franchised dealers.

M-H Catalog 8304 is About industrial Controls

"INDUSTRIAL CONTROL" for temperature, flow, pressure, liquid level and humidity is covered in catalog 8304, published by the Minneapolis-Honeywell Regulator Co., Industrial Div., Philadelphia 44, Pa. The 60-page catalog presents more than 100 different models of non-indicating electric, electronic and pneumatic controllers.

Additions to the previous line are shown, including electronic, electric and pneumatic insertion type tempera-

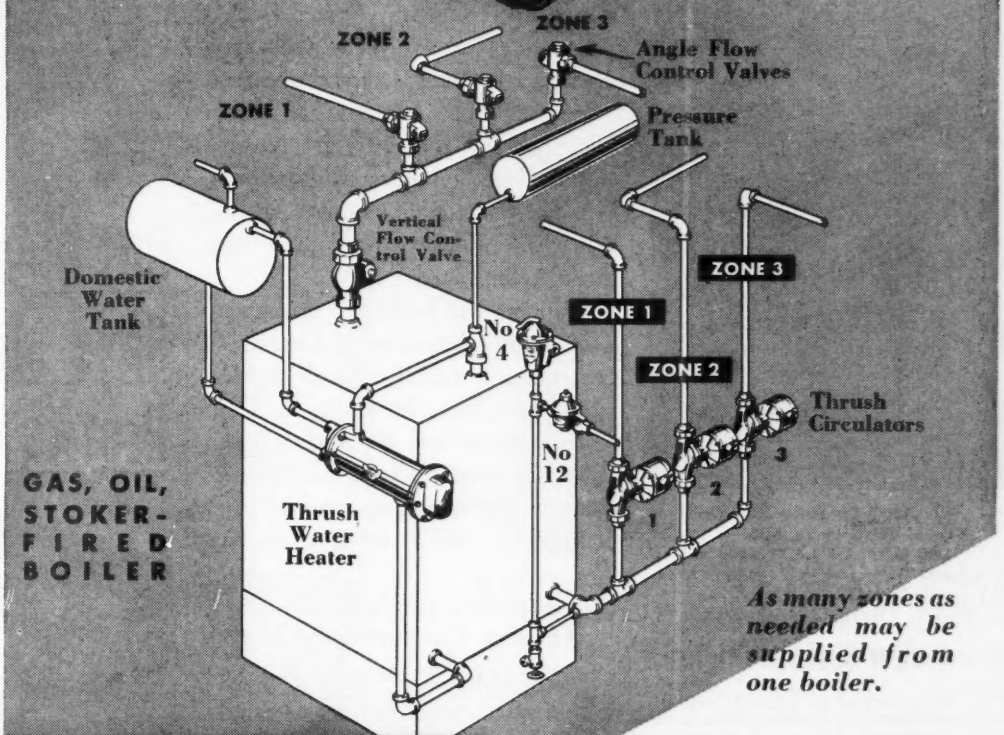
ZONED FOR COMFORT and economy!



ZONE 1—*Kitchen, Utility Room, and Servants' Quarters.*

ZONE 2—*Living Room, Den, Dining Room, and Game Room.*

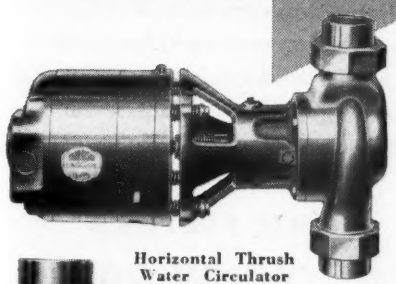
ZONE 3—*Bedroom Wing.*



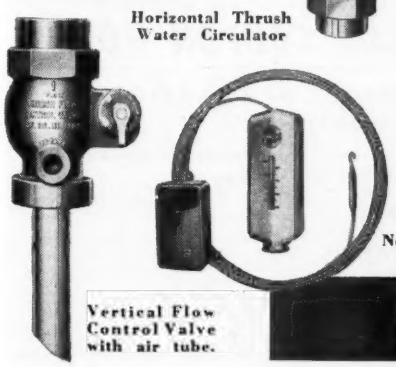
As many zones as needed may be supplied from one boiler.

THRUSH forced circulating

FLOW CONTROL HOT WATER HEAT



Horizontal Thrush Water Circulator



No. 201 Radiant Heat Control

Vertical Flow Control Valve with air tube.

ANY HOT WATER heating plant may be zoned easily and inexpensively with Thrush Flow Control System, to supply as many zones as are needed from a single boiler. These zones may be in the same house or in adjacent buildings, often greatly reducing equipment cost because the one boiler replaces many. Only a Circulator, with Relay Transformer, Flow Control Valve, and a Radiant Heat Control are added for each additional zone . . . simple units which give dependable and individual comfort control in each zone. Thrush Water Heater eliminates the need for separate domestic water supply as the same heating boiler automatically provides plenty of hot water for kitchen, laundry and bath summer or winter. Ask your wholesaler today for more information or write Dept. C-4 for bulletin on Zoned Heat.

H. A. THRUSH and CO.
PERU . . . . . INDIANA

You SAVE

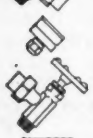
when you use

Guardian

OIL FILTER VALVES

No. 1200 Individual Tank Control Valve

No. 1900 Oil Filter and Constant Level Valve made with ⅜", ½", and ¾" inlet I.P.T. male thread and ⅜" and ½" outlet I.P.T. male thread.



No. 1300 Two Tank Control Valve Assembly

Another Guardian Original!

First produced by Guardian, this new oil filter valve has had a remarkable acceptance because it guarantees perfect installations in less time. Elimination of nipples and fittings reduces labor and parts costs. Fewer joints reduce the possibility of costly, troublesome leaks.

No. 1600 Underground Tank Valve

Guardian Oil Valves are precision machined from solid bar stock. Having no porosity, pin-hole leaks are absolutely eliminated. Other Guardian features: metal-to-metal seat for perfect closing and longer life, taper seat on body with radius on stem to prevent locking, adjustable packing nut with special J-M graphite-asbestos packing. All valves are tested under 250 lbs. pressure.

No. 1400 Globe Valve for Oil, Water or Gas

Dealers: Write for Name of Nearest Jobber.

Ask about Guardian Flexible Couplings. Over 4 million in use.

To be sure you get Guardian quality look for the name Guardian stamped on the body of the valve. All Guardian valves are GUARANTEED valves.

Guardian
PRODUCTS CORP.
VALVE DIVISION

DEPT. F-41, 1215 EAST SECOND STREET

Michigan City, Indiana

ture controllers; magnetic starters and contactors; heavy-duty pneumatic positioning motors; pneumatic automatic reset relays and both pneumatic and electric step controllers.

Timken plans Cruise For Sellabration Winners

DEALERS AND SALESMEN who qualify as winners in the 1951 Sellabration Contest, sponsored by the Timken Silent Automatic Div., Timken-Detroit Axle Co., Jackson, Mich., will enjoy a three-day Great Lakes cruise next September. The contest, an annual event for more than 20 years, rewards winners based on outstanding achievement in the sale of Timken heating equipment. This year's contest runs through June 30.

Winners will board the cruise ship S. S. South American at Detroit on September 1, travel through the Detroit River, Lake St. Clair, St. Clair River, Luke Huron, St. Mary's River, Lake Superior and Lake Michigan to Chicago. Sightseeing stops will be made at Mackinac Island and Sturgeon Bay.

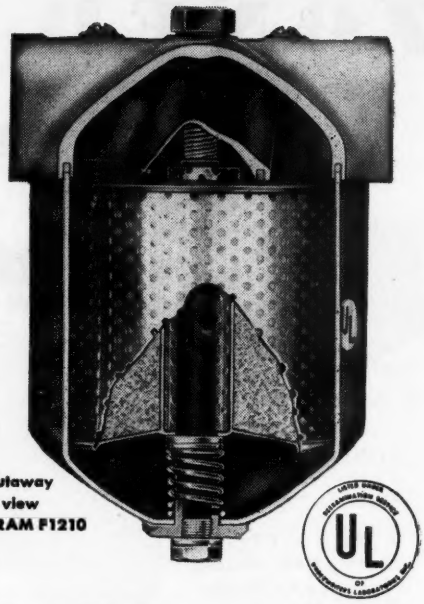
Stockholders re-elect Nu-Way Corporation Officers

OFFICERS of the Nu-Way Corp., Rock Island, Ill., were re-elected at the March 12 meeting of the company stockholders. William F. Klockau was re-named president, O. K. Gipple, vice-president and treasurer; M. L. Griffiths, secretary and J. E. Rettke, assistant secretary and assistant treasurer.

A substantial increase in Nu-Way oilburner shipments during 1950 was reported at the meeting, where plans for 1951 production schedules also were discussed and approved. Mr. Klockau expressed an optimistic view for maintaining and possibly increasing over-all production under existing conditions.

Sundstrand prepares Bulletins on new Pumps

MODEL "J" and "K" oilburner fuel units, announced last July by Sundstrand Machine Tool Co., Hydraulic Div., Rockford, Ill., are the subjects of bulletins just announced. Bulletin 1102 describes model "J" and "JS" single stage models, bulletin 1101, models "K" and "KS" two stage units.



Cutaway view FRAM F1210

Cut Nuisance Calls-Save Money-Boost Profits with . . .

FRAM FUEL OIL FILTERS

Filters the oil clean through an entirely new development • Removes dirt, rust, scale, water • Assures steady flow of clean oil to the burner • Protects pump valves and nozzles • Reduces service expense and needless, troublesome calls • Easy to install • Replacement cartridge builds repeat profits • Available in capacities of 2000, 4000, 6000 gallons of oil consumed per year. Send for complete details. Find out how you can profit with Fram.

FRAM FILTERS

MAIL COUPON NOW

FRAM CORPORATION
Providence 16, R. I.

Please send me complete details about Fram Fuel Oil Filters for Oil Heating.

NAME_____

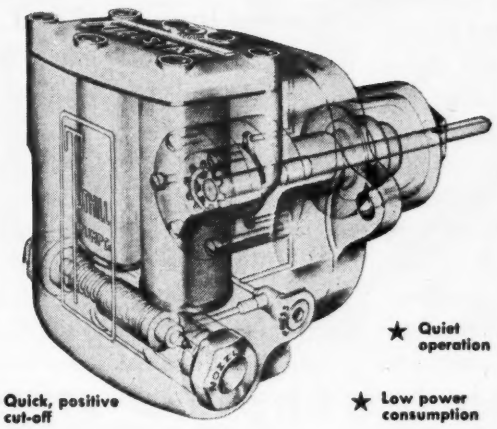
COMPANY_____

ADDRESS_____

INSIDE STORY OF PROVED PERFORMANCE

★ Strainer removable without spilling

★ Cast iron pump unit encased in 45,000 p.s.i. tensile strength zinc alloy



★ Quiet operation

★ Quick, positive cut-off

★ Low power consumption

★ Light weight

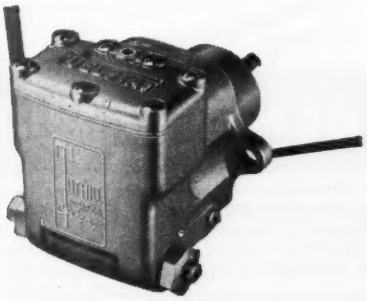
TUTHILL 30E6N FUELSTAT

Provides
- UNIVERSAL APPLICATION
- DEPENDABLE PERFORMANCE
- SIMPLIFIED SERVICING
- GREATER ECONOMY
- MORE ATTRACTIVE APPEARANCE

Proved by thousands already in service, this perfected Tuthill Fuelstat sets the pace for dependable pumping equipment. All working parts are made of cast iron and steel with high grade (99.99+% pure) zinc alloy body to obtain the ultimate in toughness, durability, corrosion resistance and leak-free performance.

It will pay you to write for full details today

Tuthill
PUMP COMPANY
939 East 95th Street
Chicago 19, Illinois
Phone: REgent 4-7420



Kresky "sells" the Ladies

KRESKY OIL FLOOR FURNACES GIVE HOMES UP TO 36 SQUARE FEET OF *EXTRA* FLOOR SPACE

Compact Kresky Oil Floor Furnaces don't *take* room —THEY MAKE ROOM. They go *under* the floor, out of the way. Homes seem larger... more attractive.

EASY KRESKY INSTALLATIONS MEAN *YEAR-ROUND* SALES PROFIT

You can sell and install Kresky Oil Floor Furnaces *anytime.* They're on the job so fast, homes don't even cool off. Kresky helps you maintain sales volume and keep servicemen busy when other business is slow.

"LIVE" BURNER DEMONSTRATION MAKES KRESKY SELLING EASIER

Let Kresky's clean, smoke-free flame sell prospects *right in your store.* Don't tell 'em... SHOW 'EM why Kresky gives more heat and cuts fuel bills.

DON'T FORGET that Kresky Dealers rang up *one-fourth* of America's TOTAL oil floor furnace sales in 1950, '49, '48, and '47!

Let a Kresky District Representative blueprint *your* share of this big slice of national sales profits. If you'd like him to call, or if you want more information right away, fill in and mail the coupon below.

MAIL TODAY!

KRESKY MFG. CO., INC.
2nd Street, Petaluma, California

451-FOH

☐ Ask your District Representative to call and pinpoint Kresky's market in my area.
☐ Send me complete facts and figures on Kresky Oil Floor Furnaces.

NAME_____ COMPANY_____

ADDRESS_____ CITY_____ STATE_____

fuelfoil & oilheat

Both models, with and without solenoids, incorporate a range of capacity making them adaptable with correct mounting arrangements and capacities for all installations with firing rates up to 20 gph. The patented "Rota-Roll" pumping principle has been retained, with a new anti-hum diaphragm and hydraulically equalized pumping members added for better operation. Other features include ability to adjust valves for a pressure range from 75 to 150 psi, 7/16" diameter hardened and ground shaft, leak-proof seals and self-lubricating bearings.

Kresno-Stamm 1951 Canadian Catalog to be ready soon

ON PAGE 136 of our March issue a news item briefly described a catalog prepared by the Canadian Div., Kresno-Stamm Mfg. Co., Palisades Park, N. J. The review failed to indicate that the edition was published last June. A new, enlarged issue, covering this year's line of equipment and accessories, is expected to be ready for distribution within a month or two.

Sid Harvey forms Two new Companies

FORMATION of Sid Harvey Sales, Inc., 363 Clinton St., Hempstead, N. Y. and Sid Harvey of Conn., 1404 Kossuth St., Bridgeport 8, Conn., has been announced by Sid Harvey, president, Sid Harvey, Inc., Valley Stream, N. Y. and chairman of the board of the Associated Sid Harvey Companies.

Both new companies will operate in localities where the amount of automatic heating business has outgrown present facilities. Veteran Sid Harvey employees will man the new outlets and the complete line of new and rebuilt replacement parts will be stocked.

Sid Harvey Sales will provide an additional pick-up point for dealers on Long Island and will be headed by Joseph R. Ziminski as president, managed by Jack Deyo, vice president. Mr. Deyo formerly was Valley Stream sales manager and to replace him Leslie Algar has been promoted to sales manager and Robert Mitchell, salesman, moved up to succeed him as assistant sales manager.

Sid Harvey of Conn. will be headed by Lawrence Harvey as president, with James McKenna, formerly branch manager, as vice-president and general manager.

In another move to improve service, Sid Harvey of Md., Inc. has moved to a larger store at 6905—44th St., N. W., Washington, D. C. Not only is there more space at this location, but it has better parking facilities and a second entrance on Blair Road.

Electrol Burners offered As Prizes on Television

FOR THE NEXT FEW MONTHS a number of Electrol oilburner installations will be awarded as feature prizes on the "Chance of a Lifetime" weekly television show. Electrol Burner Mfg. Co., Rutherford, N. J., maker of the "Ball Flame" oilburners, regards the move as an opportunity to acquaint the nation with the name and features of the burner and build consumer demand.

The show is sponsored by Bendix Appliances, with John Reed King as master of ceremonies, and is one of the

AUTOCRAT OIL BURNERS

OFFER HEAT PLUS ECONOMY

FOR YOUR CUSTOMERS

with the NEW COMBUSTION HEAD

This famous Autocrat Line is one of the oldest and finest in America. As a Dealer, you can safely recommend Autocrat Oil Burners to your customers. You may promise efficiency, dependability and economy . . . and Autocrat with the new Combustion Head will live up to your promises. Write at once for prices and liberal Dealer discounts.

Manufactured by

CHANDLER COMPANY

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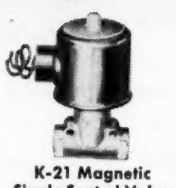
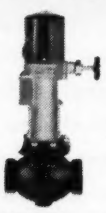
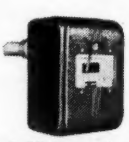


K-21 Magnetic Single Seated Valve

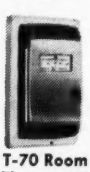


V-110-1 Manual Reset Valve

K-10 Magnetic Lever Valve



L-32 Immersion Thermostat



T-70 Room Thermostat

R-99 Oil Burner Stack Control

GENERAL CONTROLS

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Manufacturers of Automatic Pressure, Temperature, Level and Flow Controls

FACTORY BRANCHES: Baltimore 5, Birmingham 3, Boston 16, Buffalo 3, Chicago 5, Cincinnati 2, Cleveland 15, Dallas 2, Denver 4, Detroit 21, Glendale 1, Houston 6, Indianapolis 5, Kansas City 2, Minneapolis 2, Newark 6, New York 17, Philadelphia 23, Pittsburgh 22, St. Louis 3, San Francisco 7, Seattle 1, Tulsa 6, Washington 6.

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Retort Cement

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Here is a cement, developed by Pecora, to specifically meet the exacting requirements of installations that must cope with wide temperature extremes... a practically indestructible binding material that is absolutely fire-proof... resistant to acids and corrosion... burns hard without cracking and is completely odorless... non-porous and not subject to air leakage. Pecora Asbestos Retort Cement is the ideal material for mounting furnaces, heaters, stoves... for cementing joints exposed to intense heat. Iron will melt where this cement will stand!

A Superior Product Designed For Superior Workmanship

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A heat-resistant cement for sealing or joining of parts subjected to high temperatures.

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A durable, dependable sealing compound that will maintain an air-tight seal despite vibration.

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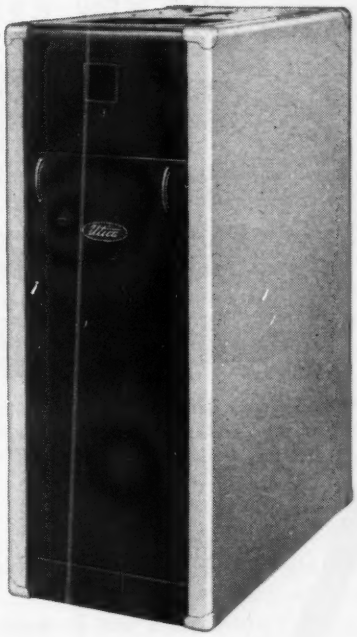
Manufacturers of Caulking Compounds, Roof Coatings, Maintenance Finishes, Industrial Enamels
SPECIFY PECORA AND YOU SPECIFY QUALITY

THE
Utica '1'
OIL BURNING
BOILER



Here are seven points of preference for the Utica "1" wet base — oil-fired Sectional Boiler:

1. Tailored for homes with or without basements — Wet Base Construction.
2. Made of durable Cast Iron — the lifetime metal.
3. Equipped with built-in large capacity Tankless Heater — (3 to 5 G.P.M.)
4. Can be supplied with prefabricated combustion chamber and flange-mounted Oil Burner.
5. Engineered for low fuel consumption.
6. Efficient — trouble free — easily installed.
7. Available in five sizes.

UTICA RADIATOR CORPORATION
UTICA, N. Y.

few television shows that has nation-wide coverage. The program is seen and heard in more than 30 states over 40 stations.

Monogram opens Midwest Warehouse

A WAREHOUSE has been established at 2295 Wycliffe St., Merchandise Bldg., St. Paul, Minn., by Monogram Products Co., Philadelphia 4, Pa., manufacturers of Lite-Cast combustion chambers.

The move was intended to assist jobber customers. A complete stock of a varied line of combustion chambers will be available for delivery in the North Central states area which the warehouse will service.

G.E. announces new Motor training Course

THE FIFTEENTH training course in motor selection and application, in the company's "More Power to America" series, has been announced by the General Electric Co., Schenectady 5, N. Y. The course is designed to show how to select the right motor for any job, specifically instructing students in how motors operate, what types are available and the selection and application of the right motor from these types.

Nine 35-mm black-and-white slidefilms, student review booklets on each lesson and an instructor's manual makes up the course, offered as a kit by G.E. for $100. The kit contains the nine films, 1 manual and ten copies of each of 9 student review books.

The instructor's manual is prepared to enable any competent engineer to teach the course, containing in its 96 pages instructions on planning and setting up each lesson, projection information, scripts and pictures for the slidefilms, questions and answers to accompany review frames for the films, references sources and answers to questions contained in student review booklets. The first three slidefilms are instructions in fundamentals, followed by others that are more technical and deal with specific motor types.

Automatic Devices opens New factory Building

H. T. KUCERA, president, Automatic Devices Co., Inc., Chicago, Ill., announces opening of a new weather-controls factory in Western Springs, Ill. He explains the expansion as made necessary so the company could handle the increasing demand for its outdoor type heating controls.

The company has been making Weather-Man units for some time and more recently added Weather-Chron, a weather-controlled day-night switch.

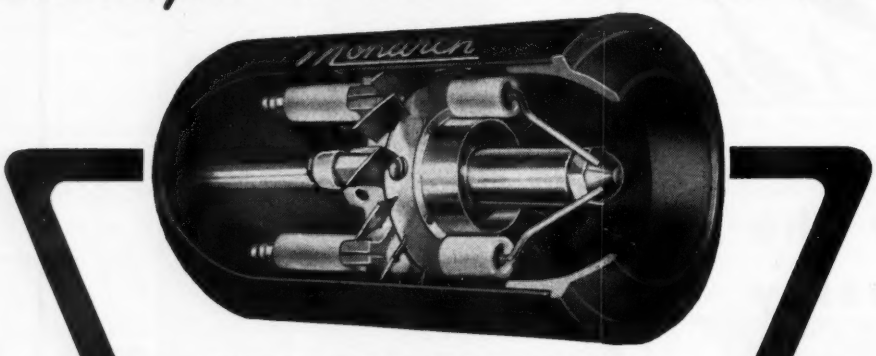
"X" Laboratories issues Manual on its Products

A MANUAL, prepared by "X" Laboratories, Inc., New York 19, N. Y., describes the company's line of chemicals and compounds for service work. The "Heating System Service Products Manual" contains a complete explanation of the make-up, function and action of "X" boiler liquid, to stop leaks in high and low pressure boilers and hot water heating systems; Flush and Rustoff, for stopping foaming, surging and priming and retarding rust formations.

A table based on boiler capacities

.....MONARCH.....

Investigate THE NEW G81 COMBUSTION HEAD



The new G81 combustion head will produce just as high combustion efficiency as the G74 head and will burn from .60 to 2.00 gph.

"PLUS" FEATURES OVER THE G74

- Costs half as much.
- As easy to install as an ordinary air cone and stabilizer.
- Simpler in construction.

WRITE FOR INFORMATION

MONARCH BURNER NOZZLES Preferred Because:

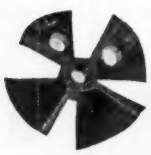
1. Each nozzle is individually tested and checked for capacity against the flow of a calibrated master sample. Capacity tolerances are as low as plus or minus 2½%.

2. Standard nozzles will fire most gun type high pressure burners satisfactorily. (Special series are also available for burners requiring specified spray characteristics.)

MONARCH Air Cones And Stabilizers Have Proved Their Superiority

Best results are obtained by use of air cone and stabilizer together. Many manufacturers use this equipment. Pulsation can usually be overcome by using our recommended "Anti-Pulsation" equipment.

Write for circular No. 62250



STABILIZER

AIR CONE

Write for Catalogue D

MONARCH MFG. WORKS, INC.

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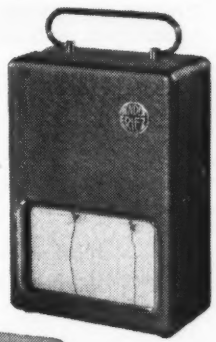
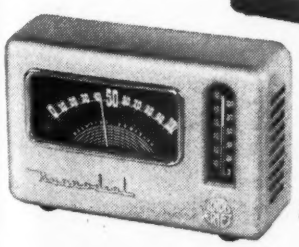
MODEL 160

Portable Humidity and Temperature Recorder

3" x 5" charts, 10 or 30 hour records. Modern design . . . handy for small space and difficult locations . . . built to meet unusual conditions.





BENDIX-FRIEZ

Hygrodial

Precision Humidity and Temperature Indicator

Hair-operated and calibrated to professional standards of accuracy by the maker of the world's finest weather instruments. Handsome, modern case—4" high, 5½" wide, 1⅝" deep—desk or wall mounting.

FRIEZ INSTRUMENT DIVISION of

1340 Taylor Avenue

Baltimore 4, Maryland

Bendix AVIATION CORPORATION

Export Sales: Bendix International Division
72 Fifth Avenue, New York 11, N. Y.

shows the amounts of each product for effective use, along with the amounts required for boilers of known water capacity. Several pages of questions and answers cover salient points about "X" products, and how they perform.

Also available is a small envelope stuffer type catalog, intended for distribution to users and consumers, containing information on the complete line. Space is provided on the back fold for dealer or jobber imprint.

Mercury Sales named Steinen Representative

APPOINTMENT of Mercury Sales Co., Syracuse 2, N. Y., as its sales representative has been announced by the Wm. Steinen Mfg. Co., Newark, N. J. Mercury will operate in all of New York state west of Schenectady.

Hall-Neal tells Dealers About Outlook for Year

A TWO-DAY CONFERENCE held for more than 200 Victor furnace dealers late in February by the Hall-Neal Furnace Co., Indianapolis, Ind., had as its theme the outlook for this year, with notable speakers in the warm air heating field explaining to the dealers their ideas of what to expect.

Fred Gombert, sales manager of Hall-Neal, emphasized the importance of the replacement market and the hard selling it would take to capitalize on it. John Payton, recently appointed sales manager, augmented Mr. Gombert's plan by introducing new "Owner's Instruction Booklets," prepared by the company. These point out to the customer the service required on automatic heating equipment, both that which he can do and that which should be left to qualified servicemen. At present the manuals have been prepared for Victor gas and oilfired winter air conditioners and gravity units, with booklets eventually to be available for the complete line.

A "Question Box" period enabled dealers to get factory answers to questions about engineering, service, merchandising, installation and similar items. In addition, they witnessed displays of new Victor gas and oil gravity units, the latter available with vaporizing or gun type burners.

FUEL OIL ODORS VANISH QUICKLY with NEUTRODA*

Just Sprinkle It On! Completely Deodorizes!

• ODORLESS • NON-INFLAMMABLE • NON-CORROSIVE • NON-IRRITATING • NON-VOLATILE • NON-TOXIC

Now — for the first time — you can COMPLETELY banish every trace of odor from spills, stains or leaks of fuel oil! Service men and drivers just carry a handy shaker container of Neutroda and sprinkle it onto the leak. Neutroda completely deodorizes the smell and removes most oil stains. Where leak is inaccessible, dilute Neutroda and pour or spray it onto leak. No more customer complaints when fuel oil has leaked, or where tank has overflowed into basement! Stop odor at its source. Use it after every job and avoid expensive service calls. Used by leading oil companies. Economical—and a little goes a long way. Neutroda completely neutralizes fuel oil odors due to spills —gives the oil industry a new competitive advantage!

CUT DOWN EXPENSIVE SERVICE CALLS

Reduce nuisance calls up to 25%. No more customer complaints about odor from spillage. You make BIG SAVINGS in time and money!

Available at Your Supply House Only. Or Write Direct for Full Information and Name of Nearest Distributor.

The TANKIT *® Co.

17 Shepard Ave., Newark 8, N. J.

TROUBLE WITH YOUR LITTLE ONES?

When it comes to filtering oil for small capacity nozzles the Hago 3-stage strainer is the answer!

The oil is filtered through one layer of 150 mesh and two layers of 200 mesh monel wire cloth, to insure removal of the smallest particles of foreign matter.

They're all metal and can be cleaned!

Hago Products - 1281 Springfield Ave., Irvington 11, N. J.

Everyday Snags

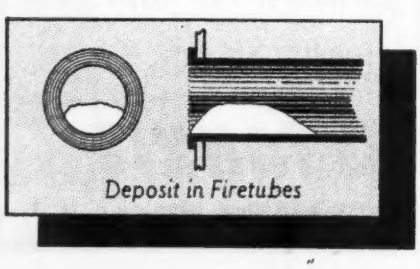
Firetubes plug

This may avoid needless worry for combustion-minded enthusiasts who install fireboxes made of insulating firebrick.

After this dealer had removed an old heavy-brick firebox and installed a box made of insulating firebrick, he began worrying about producing the 25% oil savings he'd promised the owner, so he sent his service man to take a good look at the job. The big point was to make certain the direct heating surfaces and firetubes of the steel boiler were staying clean with the burner set for 12% CO_2, and to set for lower CO_2 if they weren't.

The service man returned to the office with a tale that seemed wild to the dealer. He said that the boiler was clean, had no soot in it, but the tubes were one-third plugged. Quizzing him brought out that he saw "white stuff" in the tubes, lots of it. What was it? He didn't know. Maybe corrosion.

Dashing right out to see for himself, the dealer found the input end of each tube partly blocked with white stuff, sure enough. See the end and side views of the tube in the accompanying drawing. Removing some of this, the dealer examined it and concluded it was powder from the insulating firebrick of which the new firebox was built. Why it floated up from the firebox and deposited in the tubes in this way, the dealer does not know. He'd never seen it on any installation before. Once removed from this job by punching the tubes, it did not form again.

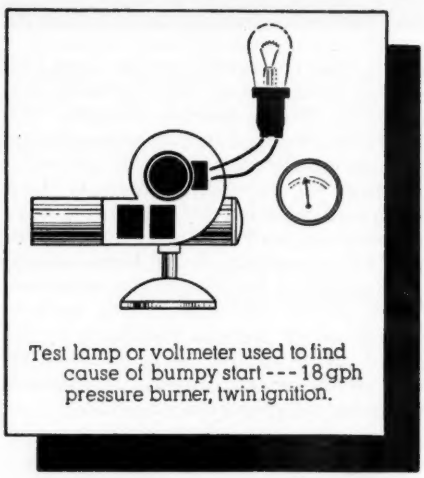

Deposit in Firetubes

After seeing the way his boss ran around after he said the word "corrosion," the service man declares, he'll think twice before he ever will use that word again on his boss.

* * *

Ending bumpy Starts

Though he's been installing 30 to 50 burners a year for five years now, this dealer says, until the middle of last heating season he'd never been bothered by bumpy starting. A month after he had installed this pressure burner, which fired 18 gph and had twin ignition, it still gave bumpy starts. He had checked the electrode settings, nozzle spray, atomizing pressure, and air-handling part adjustments. Then he had in desperation switched to a new motor, fuel unit and nozzle, and to new ignition transformers. The owner still telephoned well-founded complaints about the bump on starting.


Test lamp or voltmeter used to find cause of bumpy start --- 18 gph pressure burner, twin ignition.

"Suspecting poor burner design," the dealer says, "I checked back on three other identical big burners which I'd installed. They started smooth as silk.

"I telephone two men who know backwards and forwards this make of burner I handle. The first said the burner had no weakness that caused bumpy starting. The second had some help for me. He said the 1/3 hp split phase motor in this burner took plenty of starting current. Learning the job was wired with a long run of #14 wire, he said maybe a voltage drop, occurring while the starting winding of the motor was working, gave a weak spark until the motor came up to speed. That would delay the ignition just enough to give a bumpy start. Oil would spray from the nozzle for, say, two seconds and would not be lighted by the weak spark, he explained. Then, with the motor up to speed and the

This Complete Line of R & I Quality products for oil burner installations is available through jobbers everywhere

Service-Proved Products Make Combustion Chamber Installations Better and Easier

R & I Combustion Chamber — easy to assemble, precast, sectional, makes any shape fire box for gun-type burners in any type boiler or furnace. Saves time and money.

R & I Hearth Cement — for fire box floors and rotary burner hearths; easy to pour and cast into desired shape.

R & I Insulating Block — high temperature, water resistant for insulating beneath fire box floor.

R & I Pakinsul — clean, white, granulated mineral fiber for insulating and sound-deadening back-fill.

R & I Stic-Tite — insulating cement for troweling the coping over back-fill, sealing around burner blast-tube, loose or fallen boiler insulation, pipe fittings and stack entrance to chimney.

R & I Furnace Cement — for sealing cracks, leaks and metal-to-metal joints.

R & I #3000 Refractory Cement — for bonding and patching fire brick.

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spark therefore strong, the oil accumulated in the firebox would light.

"He suggested checking for voltage drop by using a voltmeter, or even a test lamp wired in parallel with the ignition transformer primaries. Low voltage or a dim test light, while the motor came up to speed, would indicate delayed ignition."

He doesn't say how he tested, but the dealer reports he concluded the voltage dropped down to about 75 or 80 volts when the big, split phase motor started. Ripping out the long run of #14 wire and installing #10 wire, with all joints soldered to make certain of good conductivity, ended the bumpy start trouble once and for all time.

Had all this happened lately instead of last winter, the dealer might have ended the trouble far less expensively. There's the Honeywell Delayed-Opening Oil Valve, designed to be installed in the nozzle line of a pressure burner. It delivers oil to the nozzle only after the burner motor and ignition transformer have been operating for several seconds, thus it should provide a good solution to the type of bumpy-start trouble which this dealer faced.

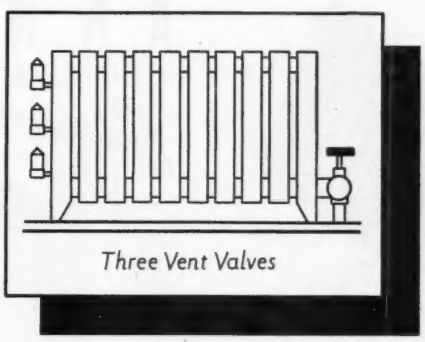
* * *

Cold steam Radiators

It makes sense to install two, three, and sometimes even four radiator vent valves on one radiator of a one-pipe steam job. No "interference" comes of this, as we had to explain to a heating man in Brooklyn many years ago when we originated and first published the idea.

Right now the idea ties in with the shorter and shorter "on" periods for oilburners, which go with the latest developments in thermostats.

If in a house with a one-pipe steam plant you switch from the 20 and 30 minute "on" periods of an old thermostat to the 5 to 15 minute "on" periods



Three Vent Valves

of a modern thermostat, you may get a call from the owner because his pet radiator no longer gets warm along with the other radiators. Handle the situation this way.

First, install on the balky radiator a new vent valve which you have faith in and know provides exceptionally high speed venting. Set it wide open, of course, for fastest venting.

Second, if that doesn't do the trick, run the burner with the vent valve removed entirely from the radiator. Run it for the number of minutes the room thermostat usually runs it. If the radiator then heats, all you need to end the trouble is two, three, or perhaps four vent valves on the radiator, all set wide open.

If the radiator stays cold with its vent valve removed entirely, and while you run the burner the number of minutes the thermostat usually runs it, then you should consider: (a) installing a highly effective quick vent on the steam main connected to the radiator; (b) increasing the firing rate, if on the particular job this is feasible and in accordance with common sense; and (c) decreasing the sensitivity of the room thermostat slightly, which might amount to sacrificing some of the comfort of smooth heating for the sake of providing the proper amount of heat in every radiator each time the burner runs because heat is needed

* * *

Efficiency Problem

What do you do about combustion testing one of these highly developed furnace jobs that has three oil rates? There's the pilot flame, an intermediate size flame that on many jobs serves for most the heating season, and the high flame.

One service expert solves the problem by determining the stack temperature first at intermediate fire, then at high fire, and reporting in the following manner to the owner. He gives the following figures as examples to be used here, not as the figures obtained from a particular furnace installation.

"With intermediate fire," he tells the owner, "the stack temperature is

460°. That's the stack temperature that counts, because it prevails while you use 60% to 75% of all the oil burned here for house heating.

"With the high fire, the stack temperature is 640°. This counts against the rest of the oil you use for house heating."

The expert then gets in some neat sales points about the fact that his competitor's equipment has only one fire size. In this house, he says, it would use all the oil for house heating while giving about 640° stack temperature.

* * *

Big job gph Rates

We watched a service man start up his first horizontal rotary cup job, after years of servicing pressure burners.

"How do I get the right gph rate, guess at it by looking at the flame?" he asked. "With pressure burners, I always judge or figure which gph rate is right for the job, then use the nozzle that gives that rate."

We suggested he use a stack thermometer and aim for 400° or 500° stack temperature for a boiler he knows is lightly loaded for its output rating, 600° for a boiler that just matches the load, and 800° or higher for a boiler that's undersize and therefore must be forced.

If you've got enough information about a boiler to know the proper gph input for it, we pointed out, you've got enough information to estimate pretty closely what the stack temperature should be.

* * *

Water in outside Tank

Be on guard for this one, especially if many of your customers have tanks buried outside.

Gallons and gallons of water were removed from this outside tank last spring. Every two or three weeks the burner stopped again because it got water from the oil tank, and another 50 to 70 gallons of water had to be pumped out of the tank.

The decision was made to replace the tank because it was leaking, and a crew of men went to work digging to uncover the old tank so that it could be picked up and removed by a rigging company.

One of the workmen just happened to look closely at the old, buried vent line, before breaking it up and getting it out of the way, as the boss was urging him to do. He found the line had a neat little break in it, which would trickle surface water into the tank.

The work of removing the tank was stopped long enough for the foreman, who still was dubious, to make an air pressure test on it. Finally the tank, under test and with the burner given oil by a 55-gallon drum, held 20-pounds air pressure for ten days.

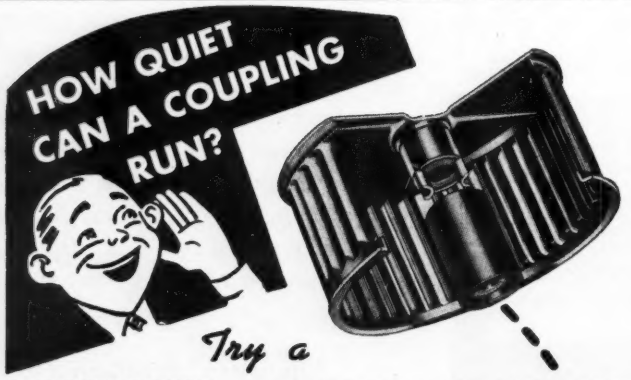
A leak in the vent line, not a leak in the tank, had been letting water into the storage tank. The owner paid for a new vent line, not for removal of the old tank and installation of a new one.

* * *

Hot Water from ice Box

Strictly speaking, it isn't an ice box that can give you hot water, it's a refrigerating system. And it does not give hot water; it gives you water heated to perhaps 100° or 115°.

However, where the fuel for heat-



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LOVEJOY L-R FLEXIBLE COUPLING

AND SEE FOR YOURSELF

This is the truly *quiet* coupling for fans, pumps and blowers. Rubber center unit increases flexibility and eliminates noise. Unique design assures maximum absorption of shock, vibration, starting torque and overloads. They correct for misalignment, surge and backlash. Lovejoy Flexible Couplings are easy to install—even in dark and close quarters. On your next installation, try a Lovejoy Flexible Coupling.

Important....

Most fan manufacturers supply blowers with L-R jaws on blower hubs.

LOVEJOY FLEXIBLE COUPLING CO.

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Also mfrs. of Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions

ANNOUNCING

A NEW, LOW PRICED

Skinner* drip-eliminator or shut-off *Valve

for better oil burner service!

Model V2-100

You can't beat the NEW V2-100 Solenoid Valve for dependability on original burner equipment or for service satisfaction. This very compact valve has such quality features as sturdy steel construction with all parts plated to resist corrosion — soft synthetic seat and seals to prevent leakage — spring loading for positive closing — *no* brazed, welded or soldered pressure *joints* — usable in any position — weight, only 9 oz. Maximum pressure is 125 p.s.i. The NEW V2-100 is two-way, normally closed, rated at 10 watts maximum and is Underwriters' approved.

Write for details and low prices!

***Skinner* ELECTRIC VALVE DIV.**

THE SKINNER CHUCK COMPANY

141 Belden Ave., Norwalk, Conn.

ing water is expensive in the eyes of the owner of a hotel or similar establishment, and where the water used to cool a commercial-size refrigeration set-up is costly, you can gain much by coupling a preheat tank to the refrigerating equipment, and feeding the preheated water to the water heating set-up. Combine knowledge of water heating and refrigeration, and you can wind up with an equipment layout that's 100% safe and about 125% efficient. As long as the temperature of the tempering tank stays below 110° (because the tank is large enough and the demand for hot water is great enough) the warm water from the refrigerator will not be wasted. Warm water is wasted automatically, however, when necessary for proper cooling of the refrigerator equipment.

❖

Nelson L. Ott, formerly vice-president and treasurer, has been elected executive vice-president of Coastal Oil Co., Newark, N. J. Other changes in the executive staff saw Michael Archer, formerly manager of accounts, become treasurer and *Robert J. Marron* appointed assistant general manager. Mr. Nelson joined the Coastal organization in 1942 and since then has served the company and its affiliates in a number of capacities. He continues as a member of the board of directors. Mr. Archer, an authority on accounts and credits, organized in 1933 for L. E. Marron, chairman of the board for Coastal, one of the first credit departments ever set up by a retail fueloil company. Robert J. Marron joined Coastal in 1946 and for the past two years has been assistant to James C. Martell, vice-president and general manager.

J. R. Wilson has been named to the newly-created post of regional sales manager, commercial division, for the Rocky Mountain region of Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. *V. D. Wissmiller* heads another new division, concerned with defense construction, and, in particular, atomic energy, aviation engine test cell and industrial building construction. He will headquarter in Minneapolis and will be assisted by *O. F. Quist* in the East, working out of the New York office. *J. H. Rasch* has been transferred from Hartford to work with Mr. Wissmiller at the company's home office. Another appointment saw *George A. Langenberg* become market supervisor of defense installation projects, to coordinate commercial division activities involving the armed forces.

Paul M. Fletcher has joined Kleen-Heet Oil Co., Brooklyn, N. Y., as sales manager. He formerly had been with the City College Midtown Business Center on the sales training staff and for 11 years before that with Texaco as sales manager of its New York division. Here he developed a sales training program for the entire country. At Kleen-Heet he will supervise the sales of burners and fueloil and is working on plans to build up and train a sales force.

STOCK NOW—for Summer Service Calls!

This Summer you will have your big opportunity to do suggestive selling. Every service call can mean the sale of a Klemm Fuel Oil Filter. This handsome unit will appeal to your customers and the clincher of uninterrupted service and pure clean oil will put extra profit in your pocket. Place an order with your jobber today and have your men carry one on every service call for easy sales.

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PROFIT NOW! WITH GRAND RAPIDS FURNACE CLEANERS

It's easy to get a lion's share of furnace cleaning profits when you use a Grand Rapids Furnace Cleaner. Greater cleaning capacity, handling ease and practically designed groups of furnace cleaning attachments help you give better service and clean more furnaces per day at a higher profit.

Act now! Write today for complete information and prices.

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233 Stevens St., S.W. Grand Rapids 7, Michigan

New Products

Conco offers Ranchief With pressure Oilburner

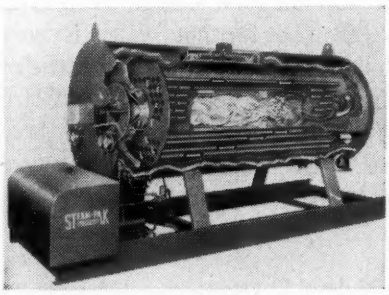
THE RANCHIEF COUNTERFLOW, furnace-burner unit, now is available with a pressure oilburner, in addition to the vaporizing oil and gasburners originally provided.

The Ranchief originally was introduced to provide under-floor-duct heating in basementless homes. It measures 22" square and with top flue outlet and under-floor ducts can be installed in a 24" by 30" space. Btu capacity at the bonnet is 64,000. The Ranchief line includes Hi-Boys as well as Counterflow models.

Made by: Conco Engineering Works, Mendota, Ill.

Steam-Pak steam Generators Have new combustion Chamber

THE ENTIRE LINE of 1951 Steam-Pak packaged steam generators, models from 15 to 250 h.p., feature new combustion chamber design. The flame swirls in a circular motion through the entire combustion chamber, the swirling being created by the blowing of excess air into the chamber around the burner. The swirling action speeds the flow of gases through the boiler, increases heat absorption and forms a protective circle of preheated air around the flame.



At the center of the chamber is a factory-adjusted carborundum ring, regulating the length of the circulating flame by squeezing it and drawing excess air into the center. This flame action has been designed to achieve complete combustion of all gases before they reach the bank of tubes. Models are available for oil and gasfiring, for low and high pressure steam or hot water.

Made by: York-Shipley, Inc., York, Pa.

Liquidepth cleanout valve Used with Petrometer Guage

THE LIQUIDEPTH safety cleanout valve provides a safe, vapor-tight access to tank bottoms from a remote point for quick removal of water and sludge. It is installed in conjunction with a Petrometer distant-reading tank gauge, is enclosed in a heavy-gauge cabinet, equipped with a lock to prevent tampering by unauthorized personnel. When the cover is lifted back and a knurled cap removed from the pump hose connection, the valve remains in

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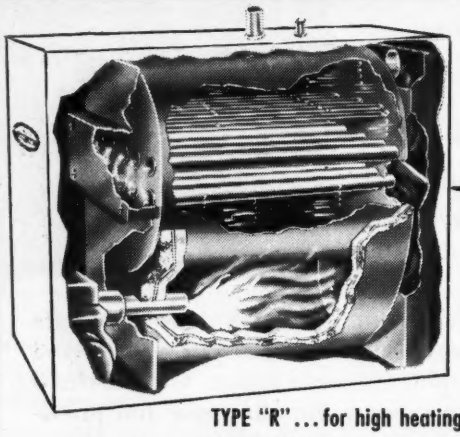

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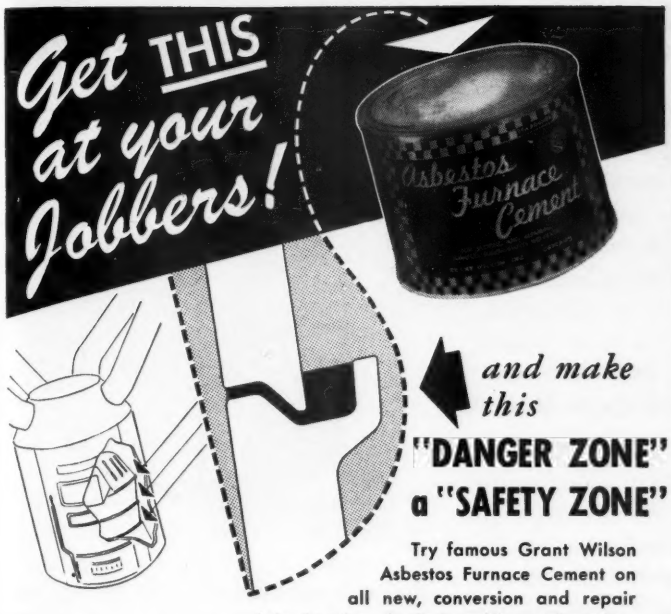

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A collection of four articles, opening with a discussion of both types of vertical rotary oil burners, followed by three on wall flame rotaries.

$1.00

Written by a laboratory manager and field engineer of Fluid Heat they cover the principles of operation, types of burners, installation methods and procedures, fire-testing the installed burner and common service problems. It's a book 8½ x 11 inches with 18 diagrams.

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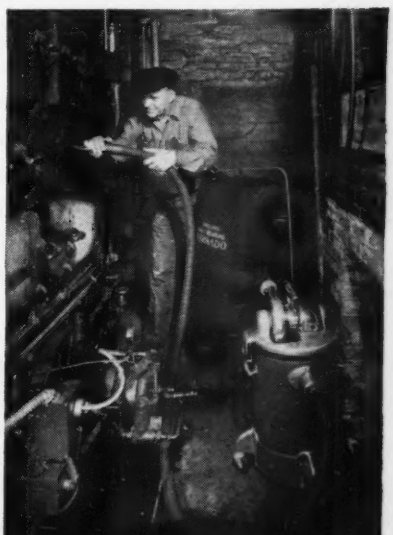
...powerful, efficient, sturdy, furnace and boiler cleaner!

Tornado furnace and boiler Vacuum Cleaners are specialized machines that quickly and thoroughly remove all heavy, clinging greasy soot from every part of the entire heating system. Powerful suction is maintained throughout the cleaning operation. Large dust and dirt-proof, double thickness bag and large capacity steel tank catch and retain all soot and dirt. Complete set of attachments for every cleaning requirement. 3 models to select from.



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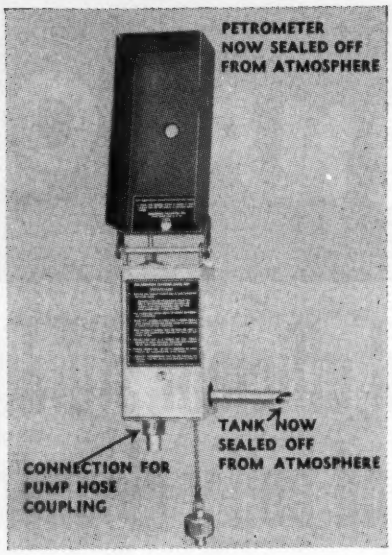


its normal position. Only when the pump hose is secured tightly will the valve inside the exposed thread open to connect the tank to the pump.

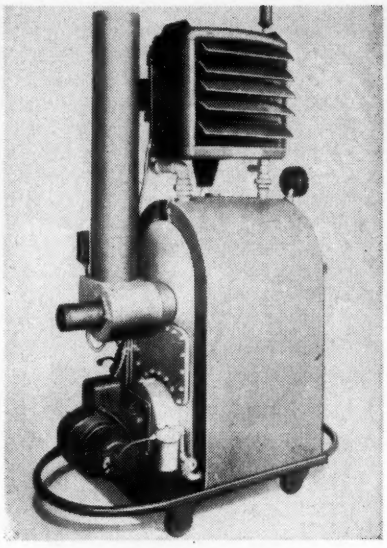
Before the hose is connected both the Petrometer tank gauge and the tank are sealed from the atmosphere. After connection, the gauge remains sealed from both the system and the atmosphere and water and sludge accumulations can be removed from the tank through the ½" O.D. tubing connecting it with the cleanout valve. Removal of the hose, replacing the cap and closing the cabinet automatically returns the Petrometer gauge to operation. All parts are brass, bronze and phosphor bronze.

Made by: Liquidepth Indicators, Inc., 1 Star Sq., Long Island City 1, N. Y.

Quiet Automatic portable Steam, oilfired space Heater

AN AUTOMATIC, oilfired, portable steam space heater has been added to the Quiet Automatic line. Designed for heating large confined areas, it features a gun type burner equipped with Catomic Adjustable Turbulators for efficient combustion.

It is fired at the rate of 1.5 gph and contains an attached 30 gal. fuel tank. Described as being as automatic as any permanent heating plant, the unit incorporates a forced draft device, effective regardless of draft conditions. Mounted on rubber tired wheels, the unit need only be moved into position, connected to a 110 V. electrical outlet and operated with its thermostat.



Made by: Quiet Automatic Oil Burner Corp., 33 Bloomfield Ave., Newark, N. J.

Weil-McLain combination Snug baseboard Panels

A COMBINATION of radiant and convected heat is provided by Weil-McLain cast-iron snug baseboard panels. The front of the panel is water backed

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The QUALITY OIL BURNER

•A size for every job • Capacity .75 to 20 G. P. H. • Adaptor flanges to fit boiler or furnace units • GE or Ohio motor • MH controls • Service-free • Stays sold.

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KENT Double Suction FURNACE CLEANERS

The KENT is geared for profits . . . engineered for performance . . . built to last! It separates into 2 parts for easy carrying.

- Low center of gravity, less chance of tipping!
- No outside dustbag, no dust passes thru fans!
- Live outlet at switch for extension light!

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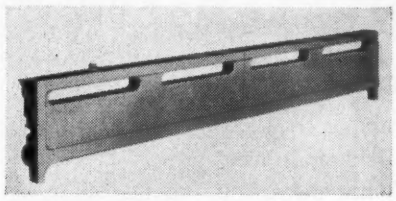
See us at Booth 149, National Oil Heat Exposition, Chicago, April 2-6—or write for literature.

CLEAN WITH KENT EQUIPMENT

The KENT Co., Inc. • 434 Canal Street • Rome, N. Y.

and supplies direct radiant warmth; the back is finned to distribute convected heat through slots in the top of the panel.

The baseboards are 7¼" high and 2⅛" wide, with panels made in 1 and



2 ft. sections, joined together by nipples and tie bolts. They are shipped assembled in increments up to 6 ft. and can be assembled into larger panels on the job. A complete line of metal accessories for finishing, including matching metal baseboard, can be furnished.

Made by: Weil-McLain Co., Michigan City, Ind.

Honeywell offers new Combination furnace Control

HONEYWELL'S new combination furnace control features a single flexible sensing element and a fail-safe limit switch. Designed for simplified installation and adjustment, the control also can be used with package heating units of compact design, where it can be mounted flush within the recess of the furnace casing. Its sensing element, furnished in 10, 20, 30, 40 and 60 inch capillary lengths, can be placed in the most desirable plenum location. Both element and sealed capillary are thermostatically compensated for ambient temperature changes, so that the control is affected only by air temperature at the sensing point.

Safety feature is the fact that the fill of the sensing mechanism normally remains at subatmospheric pressure. In the case of a failure, such as a rupture in the element, the atmospheric pressure that results would be the equivalent of an excessive temperature condition. The limit switch then would break the circuit to the burner, the fan switch would start the fan and excess heat, if present, would be dissipated. The fan switch's interlocking mechanism holds the maximum "off" setting 15 degrees below the "on" setting, pro-

tecting against maladjustment that could affect the operation of the fan control. A switch permits manual operation for summer ventilation.

Made by: Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

Dwyer CO_2 Indicator Permits Test in 20 Secs.

AN EASILY-OPERATED Dwyer CO_2 indicator features the ability to complete a test in 20 secs., with more than 500 tests possible per refill.

The body of the indicator is made from transparent solid "lucite" bar

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DRAFT-A-JUSTORS
Cut Fuel Consumption by
10% TO 30%

The *Preferred* Draft-A-Justor is the original, patented Draft-A-Justor . . . improved to include the latest in engineering developments.

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Stove, domestic and commercial sizes from 4" to 24" in diameter.

Industrial sizes from 2' x 2' to 5' x 12'.

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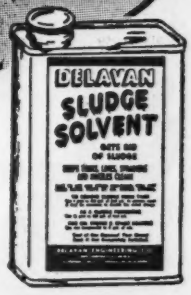

HELPS PREVENT CLOGGED NOZZLES

Cut down service complaints on clogged lines and nozzles with Delavan Sludge Solvent. Keeps tanks, lines, filters free of sludge and water. Prevents formation of soot. Assures satisfied customers; makes you a nice profit.

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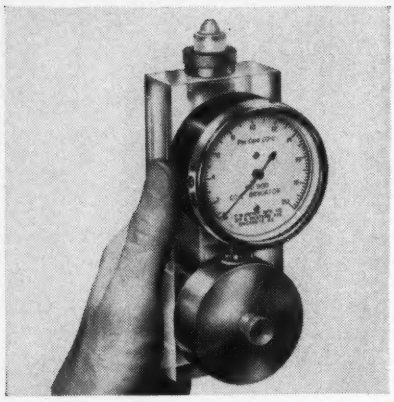


stock, making it practically unbreakable. It has an open-faced dial and is available in a heavy metal case with space for a stack thermometer, draft gage and smoke tester. Each indicator is furnished with a circular efficiency slide rule.

Made by: F. W. Dwyer Mfg. Co., 317 South Western Ave., Chicago 12, Ill.

Beverly throatless Shear Handles light or heavy Metal

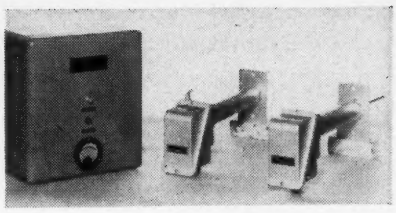
BEVERLY throatless shears are all-purpose metal cutting tools which cut in heavy gauges and handle lighter metals without distortion. Capacity of the B-3 shear is 3/16" mild steel, 10 gauge stainless, featuring upper and lower blades positioned to provide a clean cut. Design of the shoulder allows the work to be turned in any position during the cut, while a geared rack and pinion simplifies heavy metal cutting.

The shears are portable, with a removable 30" handle, but may be bolted down to benches or tables, if desired. The B-3 has an adjustable ball-bearing hold down, weighs 58 lbs., is 9" wide, 14" deep, with blades 5⅝" long.

Made by: Beverly Shear Mfg. Co., 3004 W. 111th St., Chicago 43, Ill.

G.E. electronic System For commercial Oilburners

AN ELECTRONIC combustion safeguard system for commercial oilburners, developed by General Electric, protects against combustion failure by preventing the oil valve from opening if the gas pilot does not ignite and cutting off the supply of fueloil if the oil flame fails to ignite. After cut-off the motor continues to operate for a 30 sec. purging period, and the system then is



locked until manually reset. Also, when continued operation is prevented by ignition failure, a light on the control cabinet cover indicates the equipment has gone to lock out.

For inspection and test all components can be removed easily from the front of the panel. The system's motor circuit is controlled by a built-in contactor for motor ratings up to ½ hp, 110/120 volts, single phase, with magnetic switches for larger motors.

To assure satisfactory oil temperatures before the starting cycle begins, an oil temperature thermostat can be used. When service is resumed after a power failure, low water cut-off or limit control operation during the starting cycle, the oil valve cannot open until the program switch recycles.

Made by: General Electric Co., Schenectady 5, N. Y.

MAID-O'-MIST
BALANCING VALVE ADAPTER UNITS

MAKE ANY COPPER, BRONZE OR CAST IRON TEE A BALANCING VALVE!

No. 14 ▶ Balancing Valve Adapter Unit for ⅜", ½", ¾", 1" nominal copper or bronze pipe size.

◀ No. 15 Balancing Valve Adapter Unit for ½" or ¾" cast iron tees.

Stocks of square head cocks or balancing valves are no longer necessary. These new units, quickly soldered or sweat-fitted into copper and bronze tees or threaded into cast iron tees, regulate the flow of hot water through radiators, convectors, baseboard panels, radiant coils, return mains and branches. Full free flow through the tee. No restriction except for the balancing required. Precision made of non-ferrous metals.

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No. 440 Vented Fill Cap

"BUCKEYE BUILT —to make good installations better!"

Better Oil Burner Accessories mean better installation jobs—and you can't buy better than BUCKEYE! Buckeye-built equipment does an efficient year-in, year-out job without maintenance. The Vented Fill Cap which we show here is a good example. Its heavy cast-iron construction and simple design insure long life. Other Buckeye fittings are just as well-suited for the job they're made to do. For the best in accessories—look for the BUCKEYE name.

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Strainers • Sludge Pumps • Foot Valves • Fill Boxes
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The New 1951 *Ball Flame*

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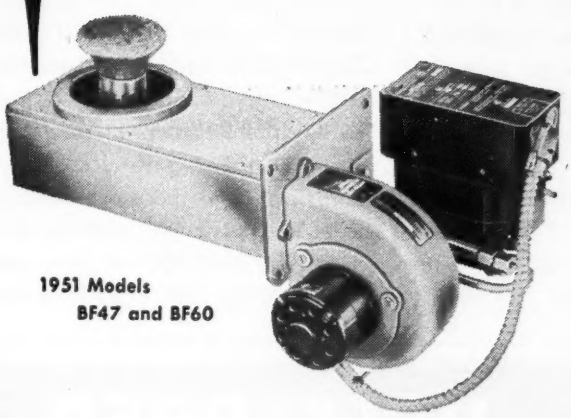
OIL BURNER



1951 Models
BF47 and BF60

In 1951 manufacturers will again show their overwhelming confidence in the quality and performance of "Ball Flame" Burners by making them a vital part of the furnaces they will ship to small homes projects and to builders of hundreds of individual homes.

This *completely automatic, pressurized air, gravity type oil burner* is now standard for leading makes of small furnaces, installed in many flourishing home developments.

Builders and heating contractors in large numbers are writing the "Ball Flame" into their furnace specifications.

Here's Why

- ✓ **It's absolutely quiet—no motor hum, no flame roar.**
- ✓ **It burns less than 0.75 gallon per hour *without clogging*, flame deflection and burning out of fire boxes, as with small capacity pressure burners.**
- ✓ **It vaporizes and burns the oil perfectly — no starving the center of burner flame and poor combustion.**
- ✓ **An automatic levelling device is built into each burner.**

KRESNO-STAMM MFG. CO. (America) Inc.
PALISADES PARK, N. J.
Canadian Affiliate: Kresno-Stamm Mfg. Co. (Canada) Ltd.
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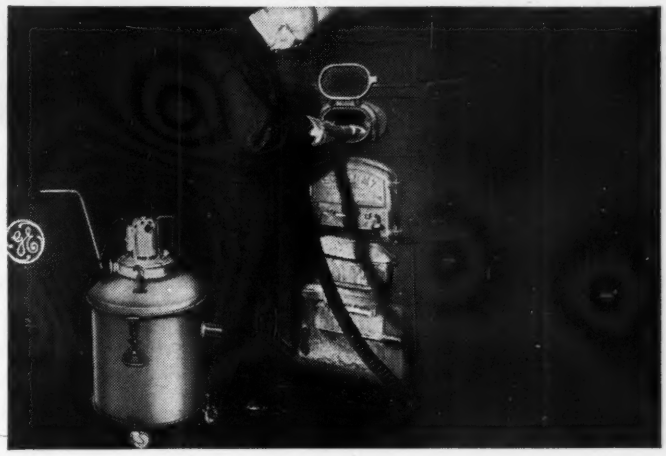
Keep Your Service Crew *Busy the Year Round*



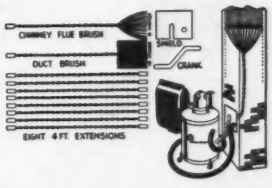
Most fuel companies and heating equipment people recognize the importance of Furnace Cleaning as a profitable business. Many service companies occupied almost entirely in the servicing and repair of heating plants find a field of greater profit in adding furnace cleaning to their services.

In summer, the normal off-season period, furnace cleaning keeps your service crews profitably busy.

General Electric Furnace Cleaners are compact, easy-to-handle and built for extra-heavy duty. They convert quickly to powerful blower action for loosening soot and grime in stubborn corners. Easy mobility makes a hit with cleaning crews. You get more work jobs and can keep busy the year round.

G-E Chimney Cleaning and Air Duct Equipment

Makes job go faster. Prevents soot from escaping into cellars. Revolving handle and vacuum hose fit through special shield that scoops up falling soot. Set includes Shield, Crank, Chimney Flue Brush, Duct Brush and 32 feet of extensions.



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Furnace and Boiler Cleaners

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, Dept. 22-1630
1285 Boston Ave., Bridgeport 2, Conn.
Without obligation, please send complete details on heavy-duty cleaning equipment.

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ADDRESS.....
CITY..... STATE.....

Heat-Timer vent Valves For Mains and Risers

HEAT-TIMER quick vent valves eliminate air from mains and risers, through a venting orifice adjustable from ½". They incorporate a built-in check that permits air to escape, but prevents it from returning. The all brass, chrome plated valves feature a rugged thermostatic bellows and are equipped with a ¾" male and ⅜" female shank.

The company also makes Heat-Timer thermostatic air valves, designed for use on low pressure one-pipe steam heating systems. These have a built-in thermostatic dial, enabling the user to select the exact temperature he wants for individual rooms.

Made by: Heat-Timer Corp., 520 Broadway, New York 12, N. Y.

Neutroda is new Name For fueloil Deodorant

NEUTRODA is the new name under which Tankit is selling its funeloil deodorant, formerly called Neutrol. Furnished in powder form, packaged in a handy shaker container, the product

is sprinkled directly on basement floors to eliminate fueloil odors due to slight leaks during service calls or other causes. If the leak is inaccessible, Neutroda can be diluted and poured or sprayed onto the leak.

In addition to banishing fueloil odor, the powder also removes most oil stains. Available through jobbers, Neutroda is itself completely odorless and non-inflammable, non-corrosive, non-irritating, non-volatile and non-toxic.

Made by: The Tankit Co., 17 Shepard Ave., Newark, N. J.

G.E. adds clock Thermostat, Automatic Air-Wall Registers

THE G.E. clock thermostat, recently announced, has a range from 50 to 80 degrees F., and features external setting, with the ability to adjust time settings in fractions of an hour. It operates on low voltage only, supplied with transformer 115 volts primary, 25 volts secondary. Its operation automatically lowers house temperatures every night and raises them each morning at the times set on the control. It weighs 3½ lbs. and measures 2⅞" high, 5" wide and is 2½" in depth.

The automatic Air-Wall register fits standard G.E. Air-Wall fittings and provides individual room temperature control. The furnace is operated by the regular house thermostat, with the Thermo-Dial on each register permitting selective temperature settings for each room. Registers feature a modulating damper, which closes when the temperature of the room matches the Thermo-Dial setting and opens when more heat is needed. A particular advantage is the ability to adjust for sud-

The PORTMAR
Residential Double-Duty
BOILER
Gives your customers Economical Heat and Year-Round Automatic Domestic Hot Water

Manufacturers! Jobbers!

Steam from 320 to 1100 ft.
Hot water from 510 to 1760 ft.

PORTMAR has designed and manufactured this exceptionally fine double-duty boiler to satisfy your customers' most exacting demands.

Check these selling points!

- √ Combined Boiler and Hot Water Heater
- √ Built for Oil or Gas Firing
- √ Maximum Efficiency In Both Utilities
- √ Attractively Priced
- √ Tastefully designed
- √ Extended and Flush Jackets
- √ Economical to Operate
- √ Heavy Gauged Steel Tubes Insure Long Life of Boiler
- √ Flush Jacket Boilers where Minimum Space is Required

PORTMAR BOILER CO., INC.
193 - 7th STREET BROOKLYN 15, N.Y.

PREFERRED
Anti-Syphon Valves

PR-194

APPROVED BY
UNDERWRITERS' LABORATORIES, INC.

Permits pumping of oil but closes to prevent syphoning in case of suction line break.

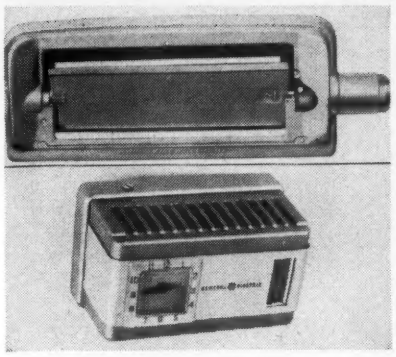
FOR OILS UP TO No. 5
Valves C5 and C10 are available in ⅜" and ½" sizes.

FOR OILS UP TO AND INCLUDING No. 5
Valves B5 and B10 are available in ¾" and 1" sizes. (1" size is built up from ¾" size with fittings.)

FOR OILS UP TO AND INCLUDING No. 6
Valve A is available in 1¼", 1½" and 2" sizes for 5 or 10-foot head pressures.

You can be sure of the best when you order from Preferred, the oldest and the largest manufacturer of anti-syphon valves.

PREFERRED UTILITIES MFG. CORP.
1860 BROADWAY, NEW YORK 23, N.Y.



den changes in temperature which may affect only a single room in the house.

Made by: General Electric Co., Air Conditioning Dept., Bloomfield, N. J.

Mortemp announces Portable furnace Unit

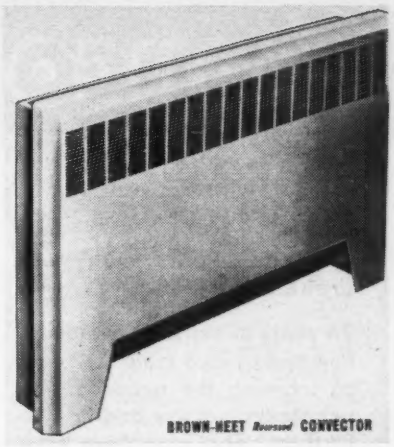
MORTEMP HEAT-MACHINE has been developed as a portable oilfired furnace for military, industrial and commercial uses. It is a vertical unit, requiring a floor space 22" wide and 33" long, and standard 80" high overall. A top mounted blower distributes heated air at ankle level and the units may be installed without a chimney since they make their own draft. If desired a 5" metal vent pipe may be extended out through the nearest wall or roof.

A description of the unit points out that hot gases coming from the combustion chamber are freed of harmful by-products so that the heat in the gases may be recovered and mixed with the heated air delivered by the Heat-Machine. All units have a double connection so that the free heat may be recovered or the gases vented outdoors. Maximum output is 160,000 Btu/hr when waste heat is recovered, 130,000 Btu/hr when it is not. A high pressure atomizing type oilburner fires the Heat-Machine, which has interior shielding to keep surface temperature below 150°.

Made by: Chimney-Furnace Corp., Box 386, Rockville, Md.

Marvel liquid line Synclinal Filters

MARVEL liquid synclinal filters are being offered in housings for line installations to meet filtration problems of oil or other con-corrosive liquids. Pipe sizes available range from ¾" to 2" diameters, units for all of which are equipped with Monel 100 mesh filter-



Brown Heet *recessed convector unit, which has been designed to provide maximum heating efficiency, adds refined artistic good looks that will fit into and beautify any home. The company hails it as an example of what happens when industrial design comes to the heating field and when able heating engineers and imaginative designers work together. Made by: Brown Products Co., 96-08—72d Ave., Forest Hills, N. Y.*

PUMP THESE LIQUIDS

Acids	Linseed Oil
Ammonia	Lime Water
Asphalt	Lye
Alcohol	Lubricating Oils
Brines	Milk
Benzine	Molasses
Bleaches	Naphtha
Blood	Mineral Oils
Cream	Olive Oil
Chocolate	Paints
Caustics	Paint Oils
Chemicals	Petroleum
Coal Tar	Pitch
Creosote	Plastics
Dishwater	Printing Inks
Drugs	Road Oils
Dyes	Soap Liquors
Ether	Starch
Fuel Oils	Sizing Liquids
Food Products	Soy Bean Oil
Gasoline	Syrups
Glycerin	Tar
Glue	Tomato Juice
Glucose	Turpentine
Grape Juice	Varnish
Hot Oils	Vegetable Oils
Juices	Viscose
Kerosene	Water
Lacquer	Wine
Lard	Yeast

VIKING

The Pump That Is SO RIGHT for SO MANY Pumping Jobs

The fast, self priming . . . the positive, steady discharge . . . the adaption to thin or viscous liquids, makes the Viking pump SO RIGHT for SO MANY pumping jobs.

The many sizes are built in a multitude of models and styles. Each is designed for the particular pumping job. It is built to meet your requirements, completely.

Learn more of these outstanding facts. Send for your free copy of bulletin 1507EE today.

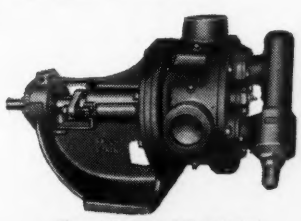


Fig. 124 TRUCK PUMP

VIKING AN HONORED NAME IN PUMPING

VIKING PUMP CO. Cedar Falls, Iowa — See Our CATALOG IN SWEETS

When you sell...

Gulf Fuel Oil...

You're selling...

clean heat, comfort!

Gulf Oil Corporation • Gulf Refining Company

DIVISION SALES OFFICES:

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GULF

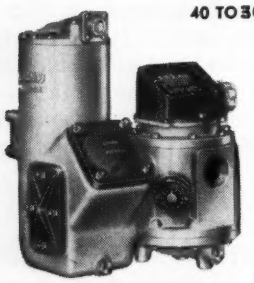
Granco

YEARS FOR SALE!

34 years of experience making fine pumps and meters. Years of learning the needs of the petroleum industry and how to fill them. That's what we have to sell. We sell it in the compact form of Granco pumps and meters!

TRUCK METERS

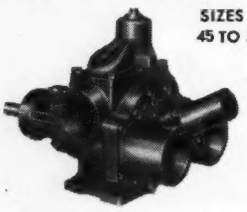
SIZES
40 TO 300 GPM



Compact and fast, Granco Meters have an accuracy and dependability that only specialized experience in meter design can attain.

TRUCK PUMPS

SIZES
45 TO 300 GPM



For compact design, ease of mounting, lasting pumping efficiency, you can't beat a Granco Pump — another product of Granco's years of experience and inventive genius.

SEE YOUR DEALER OR SEND THE COUPON BELOW

Granco
METERS AND PUMPS
GRANBERG CORP.
1308 SIXTY-SEVENTH STREET
OAKLAND 8, CALIFORNIA

Please send me literature on:
GRANCO TRUCK METERS ☐
GRANCO TRUCK PUMPS ☐

NAME_____
CO._____
ADDRESS_____

ing elements. Gpm capacities begin at 5 and 8 for two ¾" models, up to 50 gpm for the 2" size.

The filters, which may be operated in any position, have all parts heavily zinc plated, except the wire mesh filtering element. Where capacity above that of a single unit is encountered, multiple installations can be used. Easy disassembly by removing one hand nut enables the outer shell to drop from the head casting and facilitates cleaning. The filtering unit unscrews from the casting and washed in a solvent.

Made by: Marvel Engineering Co., 625 W. Jackson Blvd., Chicago 6, Ill.

Dualtron combines Heating With Precipitron air Cleaner

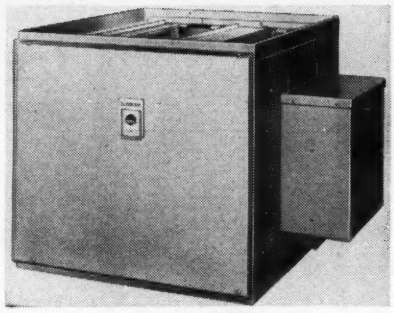
DUALTRON has announced a heating and air cleaning unit, utilizing the Westinghouse Precipitron electrostatic air cleaner. Models of the unit are offered for dual-fuel firing, for gas and oil separately, in five sizes. Smallest size has a 104,000 Btu/hr output and the oilfired model consumes 1.1 gph; the largest size delivers 320,000 Btu/hr, fired at 3 gph.

The Precipitron air cleaners are installed on either side of these units and air is drawn through them before being fed into the furnaces for heating. Air cleaning is accomplished through an electrostatic field through which airborne dirt particles pass. The particles take on an electrical charge and are carried through two series of alternately spaced collector plates. One series is positively charged, the other grounded. As a result, the charged particles are drawn to the plates and trapped to cling there until flushed away.

Made by: The Dualtron Co., 322 Perry Highway, Pittsburgh 29, Pa.

American Standard adds Magne-filter air Cleaner

ADDITION of Magne-filter air cleaners has been made to the American-Standard line, available in 7 sizes having 2 to 8 filter cells, air volume up to 600 cfm for the smallest size, from 2,100 to 2,400 cfm for the largest. These are applied to heating units whose Btu/hr at the register ranges up to 64,800 for the smallest size and from 227,000 to 259,000 Btu/hr for the largest.



Magne-filters are designed to be installed in the return duct of any air heating or cooling system, removing dirt and dust from the air by electrical attraction. They have filter cells as collector elements and will continue to filter the air if the electrostatic action is interrupted. This action is produced by a power pack, which steps up the regular 110 V. lighting circuit to a higher potential and changes it, with rectifier tubes, from alternating to direct current. This, then, is applied to the filter cells through metal grids, producing a strong electrostatic field.

Made by: American Radiator & Standard Sanitary Corp., P. O. Box 1226, Pittsburgh 30, Pa.

Thulman Chimney uses Outside air for Insulation

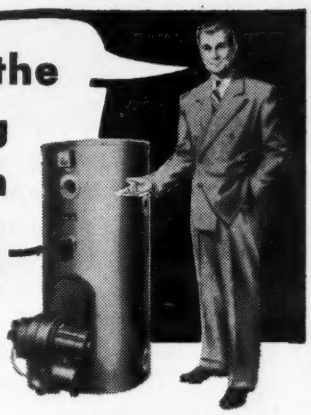
CONSTRUCTION of the Thulman chimney is such that the flue gases travel up a 6" vitreous enamelled steel central core and cold air is drawn into the top of an outer aluminum jacket, down to a 180° turn and up and out a middle concentric duct. As the flue becomes warm it heats the air in the inner duct, causing it to rise and be displaced by cold air entering the outer duct. The chimney is approved by Underwriters' Laboratories for "zero" clearance, so that framing and partitions can be placed in contact with the outer chimney shell, which is only 12" in diameter.

Acid-resisting enamel is used to coat the steel flue, with the base section, inner and outer ducts and top section made of aluminum. Made in 6" diameter flue size, the chimneys are offered for heating systems with capacities up to 400,000 Btu.

Robert K. Thulman, formerly chief mechanical engineer for FHA and now with the HHFA in Washington, worked out the design for this pre-

SELL 90% of the Home Heating Market...with ALDRICH

CONVERTIBLE HEAT-PAK BOILER-BURNERS



Nine out of ten new homes heat with oil or gas. With Aldrich you sell both markets — plus the oil-gas industrial market.

Aldrich Boiler-Burners come in seven sizes — from 100,000 to 808,000 BTU/hr. All are interchangeable between oil and gas, though the 514,000 and 808,000 sizes must be originally gas fired to have interchangeable burners.

Available Gas-Fired

Meet more requirements with less inventory . . . Cash in on oil units now, cash in again with conversions when gas is available.

Aldrich Boiler-Burners are vertical-type, compact, efficient, beautifully finished; shipped fully assembled, ready to set in place and connect.

Profit with ALDRICH — Get Details Today. Write or wire for Heat-Pak facts, full specifications.

The ALDRICH Company

ALDRICH HEAT-PAK PRODUCTS

A Subsidiary of Breeze Corporations, Inc.

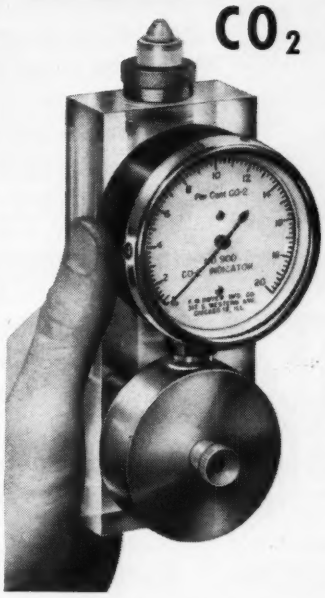
103 East Williams St, Wyoming, Illinois

ANOTHER BREEZE MARK PRODUCT

Only 20 Seconds for a Complete Test!

The NEW DWYER TRANSPARENT

CO_2 INDICATOR



The Dwyer #900 is a really new CO_2 Indicator that assures greater efficiency and accuracy in operation. It actually takes but 20 seconds to make a complete test — and you can make over 500 tests per refill. Body is fabricated from a transparent solid "lucite" bar, making it practically unbreakable. Open-faced dial is easy to read. Furnished with a circular efficiency slide rule Available in heavy metal case with provision for stack thermometer, draft gage and smoke tester.

Also manufacturers of Draft Gages, Smoke Detectors, Manometers, Pitot Tubes, etc

F. W. Dwyer Mfg. Co.

315 South Western Avenue *Chicago 12, Ill.*

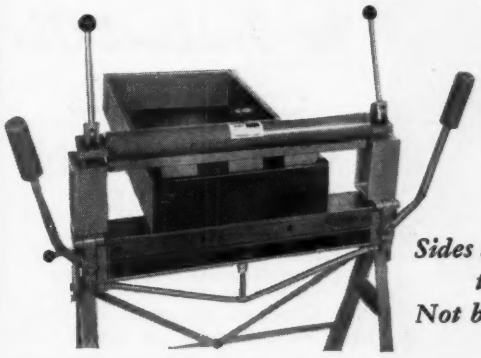
ALL ANYBODY NEEDS TO KNOW

NUMBERS COUNT IN GALLONS

GALONGAGE

APPLIED MECHANICS COMPANY

167 OLIVER STREET, BOSTON 10, MASSACHUSETTS



Sides are formed to box
Not box to sides

WEBCO

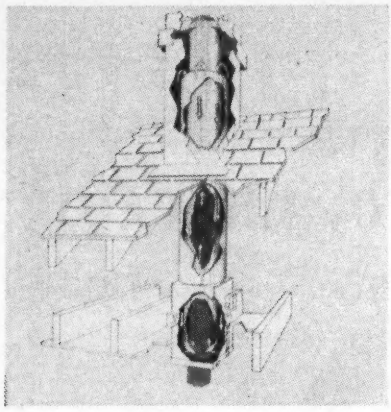
Makes the only box brake that is open which allows sheet to remain flat thru-out operation.

Makes the only slip end brake on which ducts and other similar products can be locked and removed from machine.

IN TWO SIZES — 30 INCH AND 48 INCH

WEBB MACHINE & TOOL CO.

600 WASHINGTON ROAD **PITTSBURGH 28, PA.**



fabricated metal chimney which can be used with all fuels.

Made by: Chimney Sales Co., National Bank Bldg., Fredericksburg, Va.

Ultralite Aluminum Foil-faced Insulation

ULTRALITE thermal and acoustical aluminum foil-faced heater insulation has been designed to slow down heat flow through outside metal jackets of domestic boilers and furnaces. It is a semi-rigid, dimensionally stable material, composed of textile-type glass fibers bonded together with thermosetting binder. Ultralite is offered in 4 thicknesses, ½", ¾", 1", and 1½" in rolls of 18", 24", 36", and 48" standard widths. Without aluminum foil facing the insulation has a "K" factor of .246 Btu/hr. per inch per sq. ft. thickness at 60° mean temperature; the reflective foil facing has a radiant heat reflexitivity factor of 95%. Besides its thermal properties, acoustical properties are exceptionally good in absorbing fan noises.

To apply, a sheet of Ultralite is cut to the proper size to fit the jacket, is daubed with rubber base cement and pressed into place.

Made by: Gustin-Bacon Mfg. Co., 1412 West 15th St., Kansas City, Mo.

Acme Economy Shear Comes in three Sizes

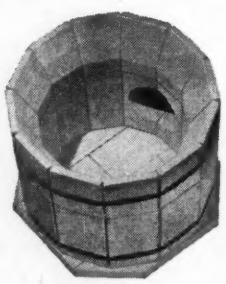
THREE SIZES, 36", 42" and 52" cutting lengths, are available in Acme's Economy P-16 motor-driven power shear. It incorporates a direct drive power unit, containing a minimum of moving parts. The drive consists of precision cut hardened steel worm and bronze worm gear units, sliding 4-jaw clutch, drive and cam, which gives the shear a positive, direct action at a slight pressure on a foot treadle.

One complete revolution, in which the knife bar is brought down for the cut and returned to the top position, is accomplished each time the treadle is depressed. Powered return of the knife bar to its "start" position is positive without the use of tension springs. Power is transmitted to the knife blade by the cam-actuated rocker arm through two steel connecting rods which are provided with turnbuckles for adjustment. Standard equipment includes spring hold-down front, rear and side gauges and push button motor starting switch.

Made by: Acme Equipment Co., Inc., 126 S. Clinton St., Chicago 6, Ill.

Richmond SU-P furnace Unit for small Homes

AN OILFIRED winter air conditioner, designated the Richmond SU-P, has been designed for use in the small



The *Instant-Glo*

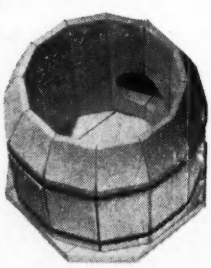
CUSTOM-BUILT INSULATING BRICK

COMBUSTION CHAMBER

The Top Quality Installation for Maximum Efficiency

INSTANT-GLO Combustion Chambers are made of special REFRACTORY INSULATING BRICKS which get hot 10 times faster than ordinary fire bricks insuring an INSTANT RED-HOT REFRACTORY SURFACE, resulting in immediate combustion efficiency—result, oil economy 15% greater than ordinary chambers. The insulating quality of the bricks also ELIMINATES LOSS OF HEAT into base of heater.

The round shape of INSTANT-GLO Chambers eliminates air pockets and produces LESS COMBUSTION NOISE than the usual fire brick chambers. Each part is taper cut like a keystone so that chamber can not fall in. The INSTANT-GLO Chamber can be installed in one hour or less. All components of each chamber carefully packed in special carton — NO BREAKAGE OR LOSS.



SIZES:

Junior or Junior A—.75 to 1.00 G.P.H.
No. 1 or 1A—1.00 to 1.35 G.P.H.
No. 2 or 2A—1.5 to 1.75 G.P.H.
No. 3—2.00 G.P.H.

Model 1A and 2A (*at right*) Special chambers for steel furnace installations.

BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

DEPENDABLE

PERFORMANCE

An Acme Electric transformer equipped oil burner, is visual assurance of dependable ignition performance. Heavy duty design, impregnated coils, sealed in heat dissipating compound.

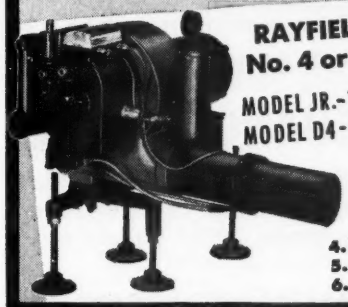
ACME ELECTRIC CORPORATION

504 WATER ST. CUBA, N. Y.

Acme ACME Electric

TRANSFORMERS

RAYFIELD AUTOMATIC OIL BURNERS



RAYFIELD BURNERS FOR No. 4 or No. 5 HEAVY OILS

MODEL JR.-1.00 to 5.00 GALS./HR.
MODEL D4-3.00 to 12.00 GALS./HR.

1. Fully Automatic
2. Self Cleaning Nozzle
3. Self Lubricating
4. All Electric Operation
5. Pays for itself from savings
6. Burns the cheaper No. 5 oil

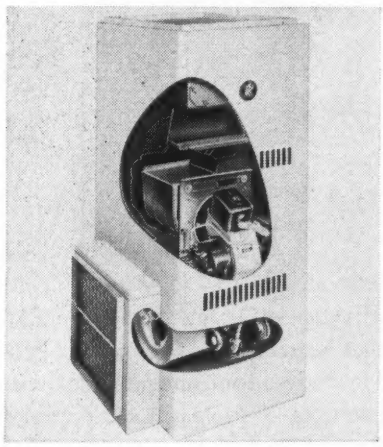
PATENTED COMBUSTION HEAD OIL BURNERS

for CATALYTIC OILS TO #3 GRADE
2 MODELS-1.00 to 3.00 GALS./HR. CAPACITY

1. Amazing Economy 12 to 15% CO_2
2. Clean boilers with perfected combustion
3. Burns Catalytic oils easily
4. Quiet—No Vibration or pulsation
5. Cuts user's oil bills 14 to 36%
6. The ideal replacement oil burner

C. L. RAYFIELD COMPANY • 2010-18 SO. HALSTED ST. • CHICAGO 8, ILL.

home where space is tight. It is a vertical steel unit, fired with a gun type oilburner and can be furnished in capacities of 85,000 and 106,000 Btu/hr



at the bonnet. It is particularly recommended for first floor or utility room installation.

The SU-P is jacketed in steel and features a 12 gauge steel heat exchanger of welded construction. Installation is facilitated by an oilburner-combustion chamber assembly which is flange-mounted and secured with 4 nuts. The combustion chamber is stainless steel.

Made by: Richmond Radiator Co., 19 East 47th St., New York 17, N. Y.

Rock-Tite tank Lining Protected by Guarantee

ROCK-TITE stone lining, installed to rehabilitate pitted, leaky or overaged storage tanks of all types, is furnished with a protective service contract for a 5-year period guaranteeing the lining, providing protection under products, liability and property damage insurance, against loss of the tank by corrosion and/or rust, complete inspection and maintenance service and a renewal of the protection at the expiration of the 5-year term.

Rock-Tite stone linings and encasings are recommended for many applications, including hot water and cold water storage tanks, fueloil tanks and water mains. The lining insulates the tank to which it is applied and when applied prevents the free oxygen content from contacting the tank plate. It is self-sealing and chemically fills openings between laps and rivets, cures under water, increases in resistant values and actually grows onto the metal, becoming a part of it, as years go by.

Made by: Charles J. Riley & Sons, 6352 North Maplewood Ave., Chicago 45, Ill.

Flexitallic Gaskets for Boiler handhole Assemblies

FLEXITALLIC style T gaskets have been announced in two thicknesses—.125" for use with assemblies having narrow seating surfaces and high bonding loads and .175" for assemblies with broad seating surfaces and low bonding loads, for boiler handhole and tube-cap cover assemblies. They are made of low carbon plated steel and Canadian asbestos filler and type 304 stainless steel and filler for all ranges of operating pressures. Ranges include models for 0 to 499 lbs., 0 to 999 lbs. and 1000 lbs. and over. Fillers other than Canadian asbestos can be furnished in combination with any ferrous or non-ferrous alloys.

The gaskets require no compounds and frequently can be reused because of their construction, alternating spiral-

KRAISSL FUEL OIL PUMPS

Compact, lightweight pumps that operate at wide ranges of speed—to handle oils of all viscosities and give long trouble-free life.

CLASS 50 Direct-drive pumps for light oils

Roller tolerances permit handling extraneous matter that would jam other mechanisms. Good suction characteristics. Capacities 60-600 GPH; pressures to 100 psi. Ask for Bulletin A-1330

CLASS 60 Reduction-drive pumps for heavy oils

Time-tested Kraissl design for direct burner supply—or as booster pump. The pump that will pull heavy oil when it is cold. Capacities, 75-1800 GPH; pressures to 100 psi. Ask for Bulletin A-1193

KRAISSL CO., INC.
295 Williams Ave., Hackensack, N. J.
Please send me bulletin A-1330 and/or bulletin A-1193 . . . with full information and specifications on Kraissl Fuel Oil Pumps.

Name .....
Name of Company .....
Title .....
Address .....
City .....State.....

KRAISSL KRAISSL CO. Inc.

REMEMBER THE ADVANTAGES OF . . .

• COMPLETE STOCKS
• GUARANTEED QUALITY
• FAST SERVICE

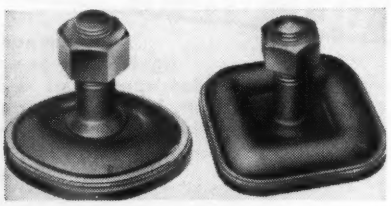
"BERCOR"
Authorized AUTOMATIC HEATING PARTS
REBUILDING & EXCHANGE SERVICE

The "Bercor" Advantages provide a dependable *one stop* center for all your parts servicing needs. "Bercor" offers the completest coverage in the Midwest of nationally known manufacturers' parts and equipment. Write for our new parts catalog and price list today.

★QUALITY BERCOR SERVICE★

G. W. BERKHEIMER CO., INC. 1040 WASHINGTON ST., GARY, IND. 437 S. ILLINOIS ST., INDIANAPOLIS, IND.

wound V-crimped plies with plies of filler. The V-crimp imparts to the metal a strong, resilient action, permitting the gaskets to rebound when not under compression. Models also are available for non-standard assemblies and can be designed for special temperature and pressure conditions.



Made by: Flexitallic Gasket Co., 8th & Bailey Sts., Camden 5, N. J.

Manville steel Boiler Series E in seven Sizes

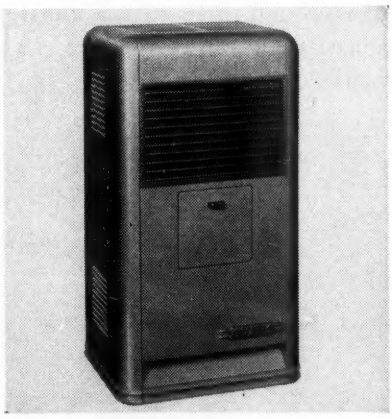
SEVEN SIZES of the Manville Series E steel tubeless boilers range from ratings of 320 to 1300 sq. ft. of steam radiation, 510 to 2080 sq. ft. of hot water radiation. The units have been designed especially for oilfiring and call for maximum firing rates of 1.5 gph for the smallest size to 5.5 gph for the largest. Standard equipment includes a built-in combustion chamber, factory-inserted domestic hot water coil or tank heater coil, draft regulator and low water cutoff, if for steam heating. An oilburner and controls can be furnished as optional equipment.

Construction features Thermo-Flo water circulating baffles which start a percolator action of water in the boiler to cause instant and powerful water movement from the bottom to the top of the boiler. Long flue travel employs 5 serpentine flue passes in each size for high heat absorption, with all flue travel points accessible for cleaning through a door opening in the front of the burner compartment.

Made by: Manville Boiler Co., Inc., 415 Lexington Ave., New York, N. Y.

New Evans Units announced Include oilfired Model 151

NEW EVANS gas and oilfired heaters introduced include model 151, oilfired vertical heater, which is rated at 50,600 Btu output. It is designed for low-cost heating for small housing.



Evans 1951 line includes oilfired home heaters, rated from 31,500 to 60,000 Btu output and oilfired water heaters in 20 to 45 gal. capacities. An oilfired floor furnace is rated at 55,000 Btu output.

Made by: Evans Products Co., Plymouth, Mich.

❖

J. D. Stevenson has become assistant export manager, Perfection Stove Co., Cleveland 4, Ohio. Before coming with Perfection he had been with the Foreign Division, Central National Bank in Cleveland.

AUTOMATIC EVEN HEAT DISTRIBUTION
WITH GORTON VALVES

For Fast Venting

Every radiator is made to automatically heat EVENLY and QUICKLY—WITH OUNCES of VAPOR INSTEAD OF POUNDS OF PRESSURE.

Write today for Literature and sizing plate

GORTON HEATING CORP.
Since 1887—Manufacturers of Heating Equipment
CRANFORD, NEW JERSEY

DON'T JUST BAFFLE!
GET SWIRLING ACTION TOO-

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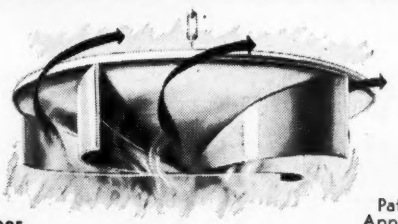

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Reader's Problems

Q. We were very interested to see your article on the application of oilburners for burning garbage.

One of our customers has put a problem to us. He wishes to construct an incinerator for use at a hospital. This would burn dressings, old mattresses, bedding, and occasionally amputated limbs.

The hospital is not large. The burner and incinerator would not be under the care of a skilled man. It has been suggsted that the burner should be an automatic type.

We doubt whether the type you show on p. 41 of the July issue would suit.

One of the objections to the type burner you illustrate would be smell caused by the incomplete combustion of the rubbish.

Any information which you would give us would be greatly appreciated.

We might say that we find your paper a most valuable one.

C. L. W., Auckland, New Zealand.

A. You may need a flat grate, about two feet wide and three feet long or of other length and width you find suitable for the load, on which the material to be burned can be piled to a depth of about one foot through use of a loading door resembling the firing door of a coal boiler. Above the grate would be a space completely enclosed by firebrick, the ceiling being perhaps two to three feet above the grate. At one end of the grate and combustion space would be the oilburner firebox, arranged so that clean-burned, red-hot products of combustion will sweep over the material on the grate and travel to an outlet for the products of combustion. The overall idea would be similar to adding a grate to the right of the firebox, in the side view of the peel oven shown on p. 41 of the July issue. The grate should be of the dumping or shaking type; after completion of firing a batch, the ashes would be dumped to an ashpit under the grate. This ashpit would have a door and frame similar to the door and frame used for loading.

Instead of using an ordinary smokehood or smokepipe hooked directly to the combustion space, use refractory construction to withstand the high heat of the products of combustion that will pour out of the incinerator. An ordinary smokepipe would become red-hot or white-hot and would deteriorate rapidly. Water pipes or coils can be used in the smoke outlet, or in a box-like structure filled by the products of combustion, to cool the hot gases and provide an economizer effect. The heat picked up by the pipes or coils can circulate to a hot water tank or a pre-heat tank used in conjunction

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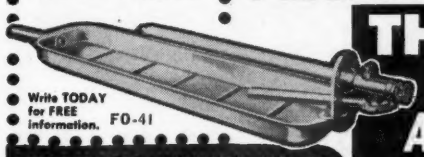

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with a hot water tank. If the incinerator will be fired daily or often, much "free" heat can be obtained from it.

An automatic burner and firebox for about 4.5 to 7.0 gph serves well for an incinerator of the size we mention. It is best to provide means for controlling the size oil flame, and the air flow to both the oil flame and the material on the grate. A horizontal rotary cup burner may work out very well.

Firing tricks are used for difficult loads. Tight-packing of the material on the grates should be prevented by making certain that pockets of combustible material are in the other material.

If on reading this question and answer any of our readers forward ideas to us on such an incinerator, we will gladly pass on to you what they have to suggest.

* * *

Q. What's the effect of beading the ends of the tubes of a boiler? Consider a hard-fired, medium-pressure package job. Your expert comment will be appreciated much, as proper installation of new firetubes is needed to end persistent trouble that's been a headache for a couple of years now. One man says bead the ends close to the fire, leave not beaded the tube ends away from the fire.

A. J. S., Brooklyn, N. Y.

A. Beading the tube ends does not make for greater tightness. In fact, doing the beading always introduces a risk of loosening the tightness produced by expanding the tubes properly in the tube sheets, because beading done improperly or excessively can disturb a good job of expanding.

Beading is done, however, to avoid the overheating of metal that is invited by using plain flared ends. High gas temperatures can in time burn away flared tube ends. Thus to bead the high-temperature ends of tubes and to try to gain tightness by avoiding beading the cooler ends, where there's no danger of burning flares ends, does make sense.

By all means take up the problem with the manufacturer of the boiler before you decide exactly how the new tubes are to be installed. Since making the unit, the manufacturer may have learned a thing or two which can be very helpful to you. Follow his advice.

* * *

Q. We have a job fired at 12 gph in a high pressure boiler. The suction lines are ¾" or larger; return line is the same size.

We want to take off about two feet from the 12 gph burner with tee's and hook on a 2 gph job. The supply tank is underground and is 8 ft. in diameter.

Can this be done OK? Or will we have to go back to the tank with a new set of lines to supply the small burner?

S. W. P., Herkimer, N. Y.

A. Many burner and fuel unit experts declare that to hook two pressure burners to the same suction line is poor practice. Doing this may cause one burner to seem to "rob the oil" from the other burner. It invites frequent air binding of one of the two burners.

Knowing all this and knowing at the same time that burners hooked up this way sometimes work well, you can

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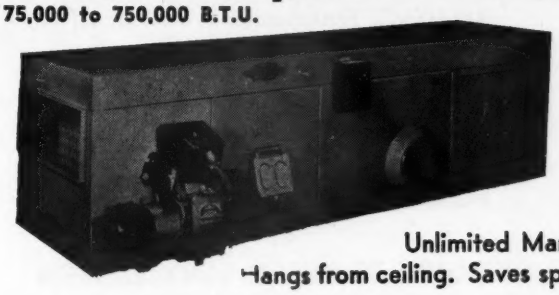

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easily hook up the new burner for trial operation to find out if on this job such a hookup will work satisfactorily and will save you the considerable expense of installing a separate suction line for the new burner. Install two check valves, the best you can get, in series at the suction line port of each burner. Two Teesdale Uni-Checks for each burner is excellent, for example. The check valves are highly important, as they prevent air from going through an idle burner and entering the suction line, while the other burner is running.

Two-stage fuel units work out better on such a job than single-stage fuel units.

If this trial operation gets you into trouble, you can feed the two burners from a wall pump temporarily or permanently, to avoid what might be the great expense of installing an extra suction line.

Even if you wind up with a separate suction line for the new burner, don't go to the expense of installing a separate return line for it. There are no drawbacks to using one return line for two burners, with this line of the adequate size you describe.

* * *

Q. How can a gasfired steam boiler, such as a Richmond type KS 4AA2, be converted to burn oil? As you know the boiler is designed just for gas and is much smaller than the conventional type boiler for the amount of radiation and, therefore, does not give enough room for the combustion chamber to burn oil.

A. You are correct in believing that boilers designed for gas can be converted to oil. You are also correct regarding the need to increase the combustion volume of a gas boiler when converting it to oilfiring. Certain oilburner dealers have made a speciality of such work and have converted dozens and dozens of gas boilers to oilfiring. We know of dealers who before the war guaranteed that the cost of oil would be 50% of the cost of the manufactured gas used previously. Of course, a dealer should be experienced in such work and a past master of the engineering which is involved before he takes it upon himself to speak definitely on the costs of heating by gas or oil.

Considerable work is involved converting a gas boiler to oil, therefore a dealer often charges $200 to $300 more for a domestic conversion installation involving a gas boiler than he does for an installation which is identical except it involves a coal boiler.

Here is one method often used to fire a gas boiler by a gun type oilburner. Shift the boiler aside or keep it in its present position and support it carefully, and make a pit in the basement floor perhaps 18" to 20" deep to provide the needed combustion space under the boiler. The pit will have a floor of concrete 4" thick, will have sides and ends of concrete 4" thick, and will be of inside width equal to the boiler. Having a pocket at one end, in which the oilburner will be located below the level of the basement floor, the pit will have to be about two feet longer than the length of the boiler. The gph firing rate can be com-

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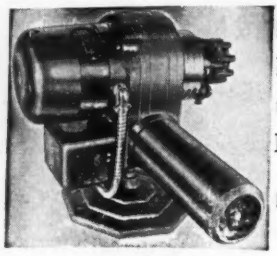

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puted easily. It simply must be sufficient to provide the proper Btu input for which the gas boiler is listed. Line the pit under the boiler with insulating firebrick to provide a floor 4½" thick and side walls 2½" thick, and usually you can easily provide a firebox of the dimensions which are correct for the gph needed for the boiler. You can provide a flame observation about 6" to 8" wide and 4" to 6" high, which may consist of a clean-out cast-iron door and frame made for a coal boiler. Often this can be located above the level of the basement floor and in the side of the boiler, the bottom of the door frame being level with the basement floor.

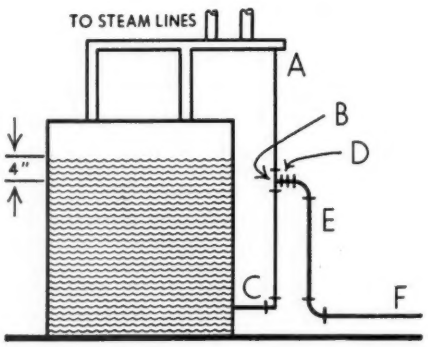
* * *

Q. *We noticed that some oilburning boiler manufacturers specify the use of a Hartford return connection on the installation of a steam boiler. We would appreciate it very much if you would send us an explanation of a Hartford return connection.*

B. A., Dubuque, Iowa

A. In the diagram, drip line or equalizer line A-B-C drains the header of condensate and entrained water, and connects the header to the return connections of the boiler. Line A-B-C is the same size as return line F, which returns all condensate from the radiators to the boiler, being fed by a number of smaller return lines connected to it.

The center of the tee B is four inches below the usual level of water



in the steam boiler. Nipple D, as short as is practical, connects the tee to an elbow.

If for any reason the steam pressure in the boiler starts driving the boiler water out of the boiler through return line E, water can leave the boiler only until the level of the boiler water becomes four inches lower than normal. Then steam from line A-B will fill pipe tee B, and steam instead of water will flow through path D-E-F, so that instead of water leaving the boiler by flowing backwards through the return lines, steam will flow backwards into the return lines. The water left in the boiler is trapped there for the moment.

The catch is that no water can return properly to the boiler while the Hartford loop is preventing the escape of boiler water through the return lines, and if the boiler continues to give steam to its load it will lower its water line farther and farther. Also, Hartford loops tend to cause pounding and hammering when with a few pounds of steam pressure on the boiler the water line drops below its proper level; the flow of steam under pressure into the water-filled wet returns naturally causes the pounding. For these reasons, today many heating engineers

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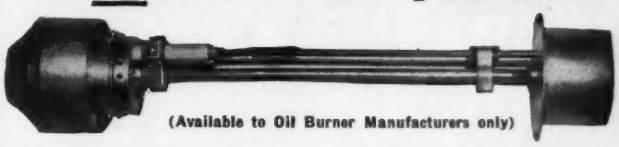

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declare it better to omit the Hartford loop and depend entirely on a reliable low-water cut-off, in-so-far as this protects the boiler fully and has none of the expense and disadvantages of the loop.

The low-water cut-off has this big advantage. It protects the boiler, at times of low water, without preventing the return of condensate to the boiler. The Hartford loop does not.

* * *

Q. We would like to have further information on the cleaning of tankless coils with chemicals pumped by a sump pump as described in an article which appears on p. 105 of the February issue of FUELOIL & OIL HEAT.

If specific information on the chemicals used successfully by this burner dealer for this purpose is available, we would like very much to have it. If you do not have it, perhaps we may have his address so that we may write to him direct.

L. G. F., Utica, N. Y.

A. Unless you are fully qualified to use chemicals which are dangerous when used improperly, do not try to use the cleaning method without on-the-job help at first from a chemist, chemical engineer, or experienced representative of a chemical supply house. Don't take any chances!

However, men who are exacting and careful use the cleaning method regularly after having been instructed properly.

To circulate the chemical through the coil, use a sump pump or a double-action hand pump which resembles a tire pump. Avoid applying excessive pressure to a coil which is tight-plugged or nearly plugged; consider 25 lbs. pressure the maximum you should use, and use a pressure gage on your rig.

Make the solution by pouring water into an enamelled pail or earthenware crock. Do not use a galvanized pail. Pour muriatic acid (commercial hydrochloric acid) into the water slowly. Make certain not to put the acid in the container first and then add the water. To add water to the acid is dangerous.

You can start using a ten per cent solution. Relatively weak, this is made by first pouring nine pints of water into the container, then adding one pint of muriatic acid slowly.

Some experts use a lime-removing solution as strong as a fifty per cent solution. For example, they put one gallon of water in the container, then slowly add one gallon of muriatic acid.

Use the sump pump or hand pump to circulate the lime-removing solution through the coil. Continue circulating the solution until it no longer foams as it leaves the coil. If you can start the foaming again by adding acid to a weak solution (a ten per cent solution to start out) you prove the acid in the solution has been used up. Half an hour of circulating the cleaner usually suffices using a weak solution. Ten minutes of circulation usually suffices using a fifty per cent solution of muriatic acid.

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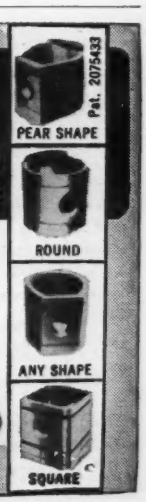

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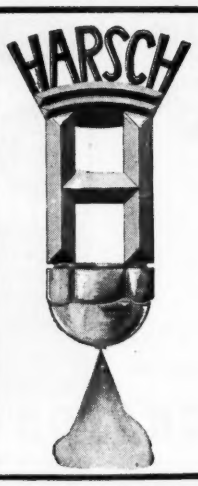

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Similar solutions are good for deliming the elements and moving parts of water mixers. Dip the limed-up parts into the solution and the lime disappears.

At least at first, protect yourself thoroughly against being harmed by the acid. Wear goggles to protect your eyes. Wear only old clothes. Keep ammonia or a mild caustic solution handy to neutralize any acid you may get on your skin.

Of course, you've got to use a pump suitable for handling acid, and must flush out the coil thoroughly with water before putting it back in service.

* * *

Q. Following through the idea on p. 105 of your February issue, we've turned to using weak muriatic acid to clean tankless coils plugged by hard water. Is this safe for the odd-type coils (as well as for regular copper coils) as were used in some "welding shop" boilers right after the war? Very troublesome, some of these look like lead, seem made of soft steel or something. M. T. C., Brooklyn, N. Y.

A. Play safe and experiment first on a coil of this type which you planned to discard anyhow, or put your question to the manufacturer of the coil who knows exactly which metal it was made of.

* * *

Q. We learn from your articles that ordinarily a fuel unit should not work against more than 10" vacuum. Is a fuel unit working well developing 18" vacuum being ruined?

A. S. J., Toronto, Canada

A. No, definitely not! There's simply more chance of noise, air-binding, and starting trouble with such a high vacuum. The fuel unit developing 18" vacuum will not wear any more than any other fuel unit. However, when it becomes old, worn and weak you may have to replace it somewhat earlier than you would have to if the job did not need 18" vacuum.

* * *

Q. We have read your magazine for a number of years and are interested in all the articles, particularly taking notice of "Readers Problems" and your answers.

However, we notice on p. 150 (March issue) a question as to whether or not a hot water heating boiler fired 2.50 gph would take an additional domestic hot water load of 80 to 120 gallons without increasing the firing rate. Your figures in the last paragraph come to 110,430 Btu for a 24-hour load, and for 16-hour operation you have 6,277 Btu hourly.

We have a figure of 6,902 Btu per hour. Is this correct? If not, how did you arrive at the above 6,277 figure?

E. C. S., Philadelphia

P.S. Just curious.

A. Your letter, the first of several to point out the error in our computations, must have been written the same day you received the magazine!

You are 100% correct, of course. We cannot even say the error was typographical, for a thorough investigation shows we printed exactly the figures which were sent to the reader who asked the problem. We thank you and the other readers whose thorough check-ups bring out our slightest errors.

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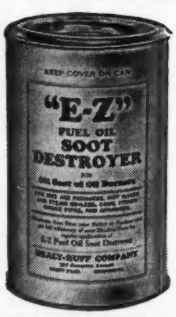

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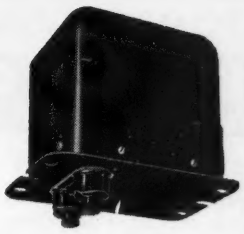

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Oilheating Trends

(*Begins on page* 12)

tion they have lost 1521 men to higher wage war industries. They have had a little success in getting some men deferred although the total number to date has been only 68.

TRUCK MAINTENANCE COST: At the request of one of the reporting group a measurement was made this month on repair and maintenance cost, for both fueloil and burner service trucks. The figures are not too useful since a much larger study would be necessary to cover all sizes and types of trucks. However, they may have some value as broad averages.

Truck repair and maintenance includes mechanical items, painting and tires, but does not include gasoline, lubrication, insurance and depreciation. On this basis the average maintenance cost for a fueloil truck is 3.41 cents per mile or it is .113 cents per gallon of oil delivered. On oilburner service trucks the average maintenance cost for the reporting group is 1.28 cents per mile.

FUELOIL STOCKS: Stocks at refineries, terminals and in transit East of the Rockies on March 3 were 37,470,000 barrels compared with 39,866,000 barrels on the corresponding date last year. This is a substantially tighter situation considering the fact that there are 15% more burners operating this season.

DEALER COMMENTS: Typical comments on questions of the month are these . . . "The oilburning industry must get organized on advertising nationally to sell the many advantages of oilheat over gas. Fuel cost is not the only answer and the customer usually gets what he paid for" . . . "Have material coming out of our ears and sales on replacement work are slow" . . . "We have some delay in getting controls and 1" to 2" pipe" . . . "Experienced installation men will be very difficult to find this summer and this will hold down sales" . . . "Copper tubing, BX cable, circulators, and R-19 relays getting harder to buy daily" . . . "We will have a fair year if we work hard and plan well" . . . "Sales interest is picking up now but some are hesitant" . . . "The oil jobber is again caught in the squeeze with no help in sight" . . . "We have expanded our line and look forward to a very busy season in oilheating equipment" . . . "Our truck maintenance cost is low because we get two years out of a motor and then the truck is never tied up more than 24 hours to install an exchange motor."

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Lee C. Bock, 58, general purchasing agent, Gulf Oil Corp., Pittsburgh, Pa., died suddenly at his home, Brookside Farms, on February 3. He joined the company at its Port Arthur, Texas, asphalt plant, left for a brief period and rejoined Gulf in 1912 as assistant to the purchasing agent at Port Arthur. He later was placed in charge of all refinery purchases and in 1946 became general purchasing agent for Gulf companies. He is survived by his wife, three daughters, a brother and three sisters.

Turn Your DEFECTIVE PARTS into CA$H

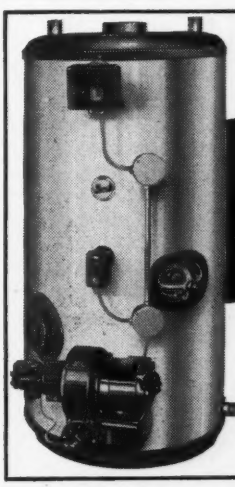
We will pay you $3.00 each for the following STACK RELAYS

MINN.-HONEYWELL	MERCOID	PERFEX	PENN	
RA116	JMI	5200	670	DELCO-COA
RA117	JM	5500	672	
R116	KMI	5520		D-L - CA701
R117				

We will pay you $2.00 each for the following FUEL UNITS
WEBSTER SUNDSTRAND TUTHILL

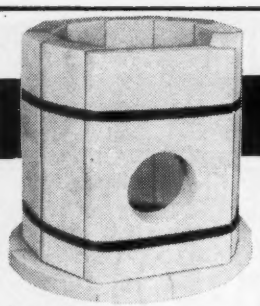
We will pay you $1.00 each for the following OIL BURNER IGNITION TRANSFORMERS
WEBSTER JEFFERSON SUPER TIMKEN
DELCO WAYNE GILBARCO

THIS OFFER GOOD FOR 30 DAYS ONLY
ALBANY AUTOMATIC SUPPLY CO. INC.
28-30 MADISON AVENUE ALBANY 7, NEW YORK



HEAVY DUTY
OIL or GAS
WATER HEATERS

For Literature and Prices Write
BOCK CORPORATION
Madison, Wis.



Equipment manufacturers are invited to bring their special design problems to us.

FOR SATISFIED CUSTOMERS — INSTALL . . .

AMERICAN COMBUSTION CHAMBERS

100% "KILN-CURED" LIGHTWEIGHT REFRACTORIES

HIGH QUALITY

American Chambers are made from the finest, high grade refractory materials combined with proper "Kiln-curing". They will withstand 2500 degree temperatures and will not crumble in water.

EASY INSTALLATION

Controlled manufacturing and careful design of American Chambers makes for fast and easy installation. The flexible pieces fit together with a minimum of effort.

TOP PERFORMANCE

Because of the high quality of materials used in American Chambers they provide faster heat-ups, quieter burner operation and savings in fuel.

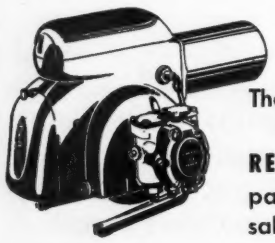
JOBBERS: Write today for price sheet.

AMERICAN CLAY FORMING CO.

TIFFIN, OHIO

HERCO
Profits Last Longer

. . . because when you sell HERCO, you are selling years of trouble-free performance. This means that your profits are protected from expensive service calls and bothersome complaints.



The *Handsome* **HERCO RESIDENTIAL** packs *plenty* of sales appeal...

. . . Here's a burner that will give your customers everything they could ask for in a fine oil burner . . . beauty, quiet operation, "built-in" efficiency. Unusual economy is made possible by the Thriftifier—an exclusive HERCO invention that provides a hotter, thriftier fire—saves oil. Built in three different sizes to fit *every* housing requirement.

Ask about the
HERCO STAINLESS STEEL OIL HEAT UNIT

For genuine value, you just can't beat it. This warm air unit has a sturdy, double-walled stainless steel combustion chamber that gives perfect heat delivery. Its exclusive "heat economizer" actually *pre-heats* cold incoming air—a feature that spells savings to the customer. Write for details.

HERCO OIL BURNER CORP., LANCASTER, PA.

HERCO
The Oil-Thrifty
OIL BURNER

DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE			
	February		Percent		(Sept. 1 to Feb. 28)			Percent
Normal	1950	1951	Change*		Normal	1950	1951	Change*
1174	1241	1057	— 9.9	Albany	4862	4616	4781	— 1.6
568	402	489	— 13.9	Atlanta	2405	1789	2478	+ 3.0
844	765	749	— 11.2	Baltimore	3413	2695	3154	— 7.6
1027	1029	841	— 18.1	Boston	4215	3766	3640	— 13.6
1168	1117	1045	— 10.5	Buffalo	4772	4316	4593	— 3.7
1085	1012	1007	— 7.2	Chicago	4539	4141	4544	+ 0.1
905	759	797	— 11.9	Cincinnati	3806	2928	3644	— 4.2
1074	963	949	— 11.6	Cleveland	4389	3727	4262	— 2.9
445	334	423	— 4.9	Dallas	7985	1629	1918	— 3.3
900	681	776	— 13.7	Denver	4198	3595	3694	— 12.0
1143	1145	1380	+ 20.7	Des Moines	4893	4754	5334	+ 9.0
1141	1070	1038	— 9.0	Detroit	4738	4294	4643	— 2.0
1150	1078	1027	— 10.7	Grand Rapids	4855	4415	4694	— 3.3
1062	1068	906	— 14.7	Hartford	4425	4144	4081	— 7.7
1155	952	1109	— 4.0	Helena	5566	6191	5848	+ 5.0
253	131	271	+ 7.1	Houston	1129	681	1048	— 7.1
982	895	915	— 6.8	Indianapolis	4139	3498	4207	+ 1.6
921	821	839	— 8.9	Kansas City	3881	3495	3822	— 1.5
232	228	235	+ 1.3	Los Angeles	891	1085	753	— 15.5
824	720	767	— 6.9	Louisville	3432	2864	3516	+ 2.4
1181	1119	1154	— 2.2	Milwaukee	5025	4803	5395	+ 7.3
1379	1356	1327	— 3.7	Minneapolis	5981	5963	6246	+ 4.4
251	124	234	— 6.7	New Orleans	1045	747	1047	+ 0.1
958	893	790	— 17.5	New York	3842	3085	3371	— 12.2
1098	1101	1008	— 8.2	Omaha	4695	4777	4795	+ 2.1
881	849	762	— 13.5	Philadelphia	3542	2949	3286	— 7.2
971	858	828	— 14.7	Pittsburgh	4042	3324	3836	— 5.1
1184	1301	1046	— 11.6	Portland, Me.	5082	5009	4857	— 4.4
622	640	559	— 10.1	Portland, Ore.	3073	3292	2784	— 9.4
1032	1016	807	— 21.8	Providence	4292	3705	3598	— 16.1
723	686	703	— 2.7	Roanoke, Va.	3165	2753	3345	+ 5.7
865	771	801	— 7.5	St. Louis	3593	3066	3764	+ 4.7
868	757	751	— 13.4	Salt Lake City	4176	3896	3625	— 13.2
340	360	353	+ 3.8	San Francisco	1734	1846	1508	— 13.0
1478	1424	1333	— 9.8	Sault Ste. Marie	6284	6195	6234	— 0.8
644	604	582	— 9.6	Seattle	3221	3444	2911	— 9.6
1090	1047	1039	— 4.6	Toledo	4553	4214	4737	+ 4.0
842	732	725	— 13.9	Washington	3496	2636	3132	— 10.4

*Compared with normal. Note: Above figures secured from Monthly Meterological Summaries published by U. S. Weather Bureau offices in individual cities.